

500-LXP

Network Computing Terminal

User's Manual

P/N 707123-001

ISSUE/REVISION SCHEDULE		
Comments	Rev. No.	Date
Initial Release	707123-001	12/13/06

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Chapter 1. About the NCT

About the Product

The NCT is designed to address the requirements of host centric and network centric users. The NCT platform supports a real time operating system and a graphical user interface (GUI). The presence of a micro-kernel, modularized POSIX compliant operating system allows the NCT to provide power and flexibility not available in server based network terminals. The NCT supports connectivity over Type A Coax, Ethernet, and Serial Ports to IBM hosts, UNIX hosts and Microsoft hosts in a windowing environment. This connectivity allows a user simultaneous access to SNA, intranet and Internet networks. Designed with no moving parts, the NCT is a zero maintenance device that allows software installation and updates from a central location.

The NCT is easy to install, use, manage and support. Maintaining software and data at a central location eliminates the need to store applications and/or data on a conventional desktop workstation. Business applications, corporate intranets and the Internet can all be accessed from one network terminal.

The NCT is unique among network computers because of its resident operating system and the caching in flash memory of frequently used applications (such as the 1480 Emulator, Telnet, TN3270 and TN5250 host access, the Netscape™ Web browser, and personal productivity tools). This flash memory caching effectively eliminates the delay encountered with server-based systems when many users log on simultaneously.

Inspecting the package

Before unpacking the NCT, inspect the carton for physical damage. If the exterior package is damaged, contact your local sales office or distributor. Also contact the carrier to request examination of the damage. The carrier is required to complete and sign a damage report form. If the package is not damaged, remove the package contents which includes all the items shown below. Check to make sure your unit is complete. Contact your Sales person immediately if anything is missing.

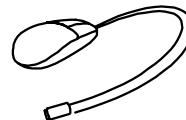
Note: A mounting base is provided with the NCT so that the unit may be placed vertically.



Main Unit



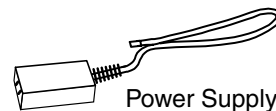
PS/2 Keyboard



PS/2 Mouse



User's Manual
(optional)

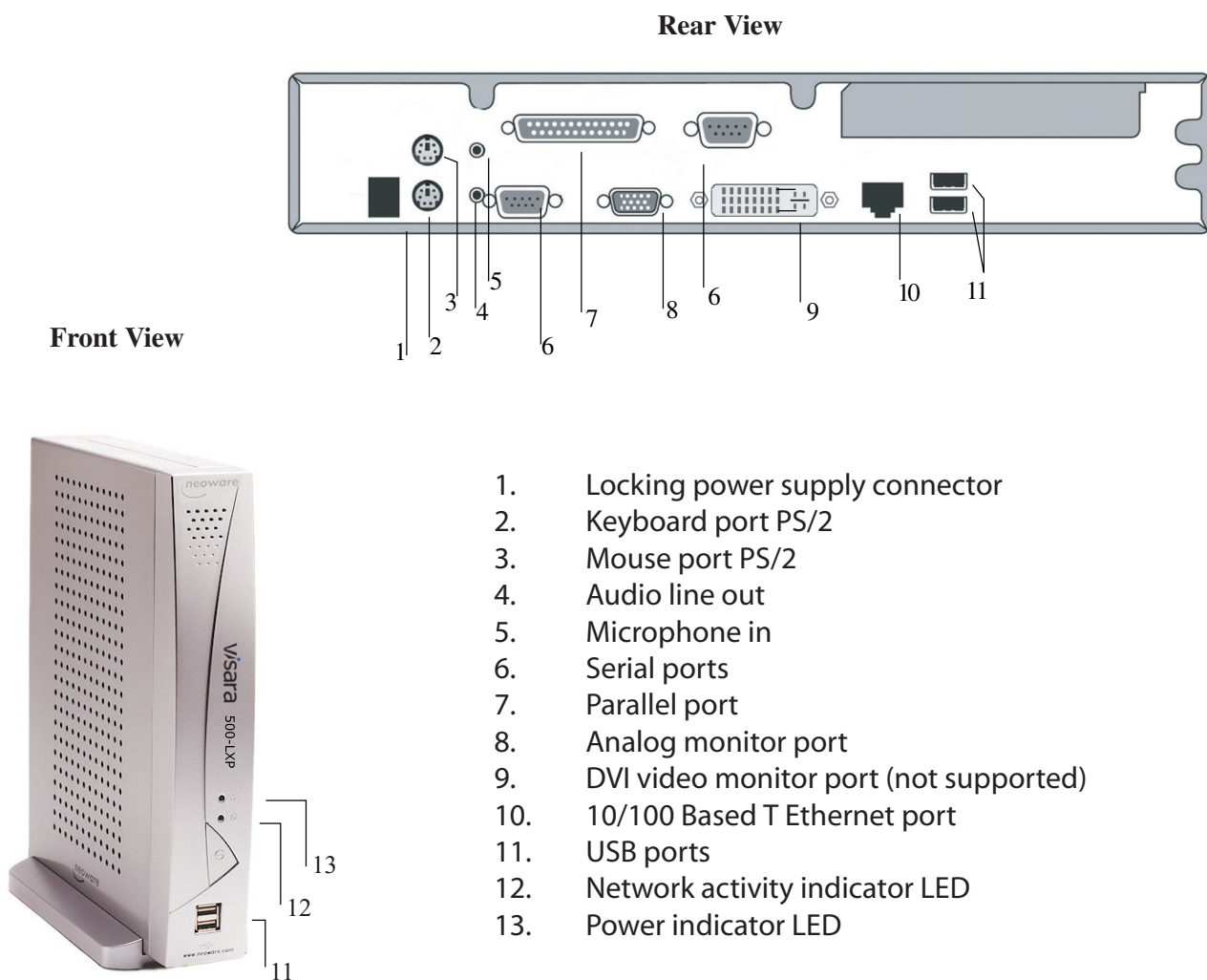


Power Supply



Power Cord

Product Overview



Setting up the NCT

To set up the NCT, refer to the diagram on the back of the logic unit and follow the steps below:



CAUTION: The NCT has been designed to support the weight of 17-inch or smaller display units. Display units larger than 17 inches **MUST** be placed beside the logic unit, rather than on top.

1. Place the display unit beside (preferred) or on top of the logic unit and position both within connecting distance of an appropriate AC power outlet.
2. Make sure that the power is off, both on the logic unit and the display unit.
3. Place the keyboard in front of the logic unit. Pull out the feet underneath the keyboard to adjust it to a higher setting, if desired. Insert the keyboard plug into the keyboard connector on the back of the logic unit.
4. Refer to the owner's manual that comes with your display unit for instructions on how to attach the display unit's data cable to the logic unit.
5. Plug the display unit's AC power cable into an appropriate AC power outlet.
6. For the local screen print function, a printer connector is located on the back of the logic unit. Attach the printer cable (provided with the printer) to the printer connector on the back of the logic unit.
7. Insert the mouse's cable connector into the mouse receptacle on the rear of the logic unit. Check to ensure that the connector is firmly seated.
8. Plug one end of the power cable into the AC connector on the back of the logic unit. Plug the other end of the AC power cable into the wall receptacle.

Connecting the NCT

Connecting to the SNA network

To connect the NCT to a coax wiring system, prepare either coax cables or twisted-pair cables according to the following table:

	Coax	Twisted Pair
Maximum length	1500 meters (4920 feet)	277 meters (900 feet)

Coax cable and twisted-pair cables can be combined. The following formula shows lengths:

$$(\text{coax length}) + (5 \times \text{twisted-pair length}) < 1370 \text{ meters (4500 feet)}$$

1. Locate the coax or twisted-pair SNA network cable.
2. Align the end of the SNA network cable with the Coax connector on the back of the logic unit.
3. Connect the cable and secure it in place by turning the retaining ring clockwise until it is tight.

Connecting to an Ethernet LAN

To connect the NCT to an Ethernet LAN, prepare the Category 5 or unshielded twisted-pair cables according to the following table:

	Category 3, 4, or 5	ANSI / IEEE Standard
Maximum Length	100 meters (328.084 feet)	802.3I - 1990 Section 14 or greater
Minimum Length	1.0 meter (3.281 feet)	

1. Locate the Category 5 UTP Local Area Network (LAN) cable.
2. Plug the LAN cable into the RJ45 connector on the back of the logic unit.

Connecting a modem to the Serial Port

1. Connect the external modem's 9-pin connector into the serial port located on the rear panel of the logic unit.
2. Secure the cable's fastening screws to ensure proper connection.

Powering up

After the NCT has been properly installed and connected, it is ready to operate online. To ensure that the NCT is prepared for operating, perform the following procedure. If you encounter operational difficulty or if the unit malfunctions, contact your system administrator.

1. Depress the Power-On/Off button to turn on power.
2. If the Power-On indicator does not light, check the power and make sure the unit is completely plugged in. If the mouse pointer does not appear, or the Taskbar does not appear, check to see if connecting cables are securely connected to the back of the logic unit.
4. Adjust the brightness control, the contrast control, vertical centering, and the horizontal centering control, if necessary.

Powering down

1. Save all work in process and close any open applications.
2. Click **Start, Shut Down**. Select either **Shutdown**, **Reboot**, or **Restart Window Manager**.

The next chapter describes how to define characteristics and preferences for the display unit and printer so that you may begin to use the Network Computing Terminal.

Troubleshooting

If you are experiencing trouble with the terminal, refer to the following. If the problem persists, please contact your local Sales Representative.

Problem: Terminal cannot be turned on.

- Check that all I/O and power connectors are correctly and securely connected as described in the “Setting up the NCT” section.
- Made sure the pins of the connectors are not crooked or broken.

Problem: LAN function cannot be started.

- Ensure that the cable is securely connected to the network RJ-45 connector, and that the other end of the cable is also securely connected to its correct device.
- Contact your system administrator.

Problem: Network server cannot be logged on.

- Ensure that the related network setting is correct.
- Contact your system administrator.

Specifications

General Specifications

- 32MB Flash
- 128MB System Memory
- Optional Coax Adapter
- Optional 15", 17", or 19" or flat panel monitor
- I /O ports:
 - RJ45 Ethernet 10/100BaseT port
 - 2 x DB9M RS232 Serial port
(supports Asynchronous modem)
 - DB25 Centronic compatible Bi-directional printer port
 - DB15F SVGA port
 - PS/2 Mouse port and PS/2 keyboard port
 - 4x USB Connector
- Audio
 - Chip VSA Soundblaster Compatible
 - Stereo Line-in, Line-out, Mic

Physical Characteristics

- NCT Base unit:
 - Height: 11.4" 29.0 cm
 - Width: 2.1" 5.3 cm
 - Depth: 8.8" 24.0 cm
- Shipping Configuration:
 - PS/2 Mouse, Users Manual, US Power Cord
 - Choice of 104 or 122 key keyboard
 - Choice of SVGA monitor

Regulatory Compliance

- Safety
 - UL1950, CSA950
 - CE Mark, IEC 950, EN60950, EU Low Voltage Directive
 - TUV-GS, cUL, UL, CCC FCC Class B, C-Tick
- Recycling Certification
 - WEEE

Safety, Power, and Environmental Requirements

The NCT was designed for the user to install into a safe environment. No special tools are required.

Space planning: physical statistics

Measurement	Logic Element
Height	11.5 in (29.2 cm)
Depth	8.75 in (22.2 cm)
Width	2.25 in (5.7 cm)

Refer to the owner's manual that comes with your monitor for its individual specifications.

Meeting environmental requirements

The following table lists the environmental requirements of the NCT:

Clearance	Six inches on all sides of the unit (Damage may result if air vents are blocked.)
Operating Temperature Range	32° to 90°F (0° to 35° C)
Relative Humidity	20% to 80% no condensation
Power	100 - 240 VAC, 50-60 Hz, 35W typically

Power cable requirements

For units operating at 100-120V:

The power cable required for domestic units is a UL listed, CSA certified 18/3 AWG, type SVT or SJT cable (9-foot maximum):

- Terminated on one end by a 125V, 15A grounding type attachment connector.
- Terminated at the other end by a 125V, 15A parallel blade, grounding type attachment plug.

For units operating at 200-240V:

The power cable required for domestic units is a UL listed, CSA certified, 18/3 AWG, type SVT or SJT cable (9-foot maximum):

- Terminated on one end by a 250V, 15A grounding type attachment connector
- Terminated at the other end by a 250V, 15A tandem blade, grounding type attachment plug.

For international units:

The power cable required is an 18/3 AWG, type SJT cable (9-foot maximum):

- Terminated on one end by a 250V, 15A grounding type attachment plug body
- Terminated at the other end by a 250V, 15A grounding type cord connector.

The cord set is marked HAR to signify appropriate safety approvals. The socket outlet must be nearby and easily accessible, per IEC 950 Sec. 1.7.2.

Power outlet requirements

The installation site must provide a properly wired and grounded power outlet. Circuits connected to air conditioners and devices that generate significant transient electrical noise should be avoided.

Electrical interference and atmospheric considerations

Electrostatic discharge in the vicinity of the unit should be minimized by avoiding high resistance floor material and carpeting that does not have anti-static properties, by avoiding the use of plastic seats and covers, and by avoiding low humidity levels. The unit should be located away from areas that generate electromagnetic interference (for example, transformers, power distribution panels, welding equipment, motors, and transmitters). Do not put the unit next to fluorescent lights. The NCT should not be installed where the atmosphere contains corrosive elements that can damage the unit.

Do not run the power cable or signal cables in areas that produce electromagnetic interference (for example, near transformers, switching equipment, welding equipment, power distribution panels, and under carpets where vacuum cleaning is done). Also, do not roll heavy equipment over the cable.

Chapter 2. Using Windows

Using the NCT

This section introduces the new operating environment of the Network Computing Terminal (NCT). It explains how to do most tasks and provides tips for getting the most out of the NCT.

If you have used windowing systems before, the “look and feel” will seem quite natural. If not, the intuitive interface is easy to learn and use.

What should I do first?

First, read through the next section - all the basics about using the mouse and working with windows are explained, and some handy keyboard shortcuts are included. After reading this section, familiarize yourself with the display’s workspace. Try starting an application from the start menu - the Netscape Browser is a good place to start.

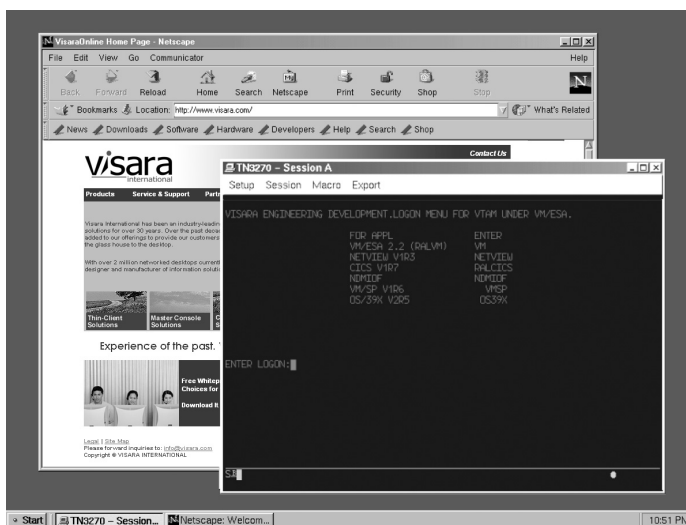
How to start the NCT

The system has been set up to start automatically at power-up. Your user ID and/or password may be required in the NCT login dialog box.

A typical workspace

After the NCT has started, it will display a workspace, an area in which you can run applications and display windows. Here is a typical workspace, with some sample applications:

At the very bottom of the screen, the *Taskbar* shows at a glance all the applications available on your desktop. The taskbar allows quick switching from one application to another. To learn how to use the Taskbar, see *Using the Taskbar* in this section.



Using the mouse

Two common mouse operations are:

- **Clicking** – Pressing and releasing a mouse button.
- **Dragging** – Holding down a mouse button, moving the mouse, and then releasing the button.

Note: When the word “click” or “drag” is used in this documentation, and no mouse button is specified, use the LEFT mouse button. When the right button should be used you will be explicitly instructed to do so.

Use the *right* mouse button to bring up a context-sensitive menu in most applications.

As the mouse is moved, the pointer sometimes changes to provide feedback. Here are the pointers most often seen:



Basic pointer - point to objects to be selected or to indicate where the cursor should be positioned.



Hourglass - Indicates that an operation is in process and must finish before data entry can be resumed.



Resize pointer - appears when the pointer passes over a window frame; the two arrows indicate the direction the window can be resized.



I-beam pointer - appears in text-entry fields to indicate that the application is ready to accept keyboard input.



No-input pointer - Indicates the window is not accepting input.

Keyboard Shortcuts

1883, 500lx, 500lxe:

Ctrl-Esc Start Menu
Ctrl-Alt-Esc Vital Product Data Menu
Ctrl-Alt-r Monitor Resolution

1480 Setup

104-key:
Alt-Shift-s
Alt-Numpad Enter

122-key:
Alt-Shift-s
Alt-Numpad Enter
Left outboard pad, key in center left
labeled Setup on front (alt function)

1490 Setup

104-key:
Alt-Numpad Enter

122-key:
Alt-Numpad Enter

122-3270 Left outboard pad, key in center left
labeled Setup on front (alt function)
122-5250 Left outboard pad, bottom key on left

TN3270 and TN5250EP

No Shortcuts

VT220 Setup

Ctrl-Shift-s

VT1451 Setup

Alt-Shift-s

VT3270 Setup

Alt-Shift-s

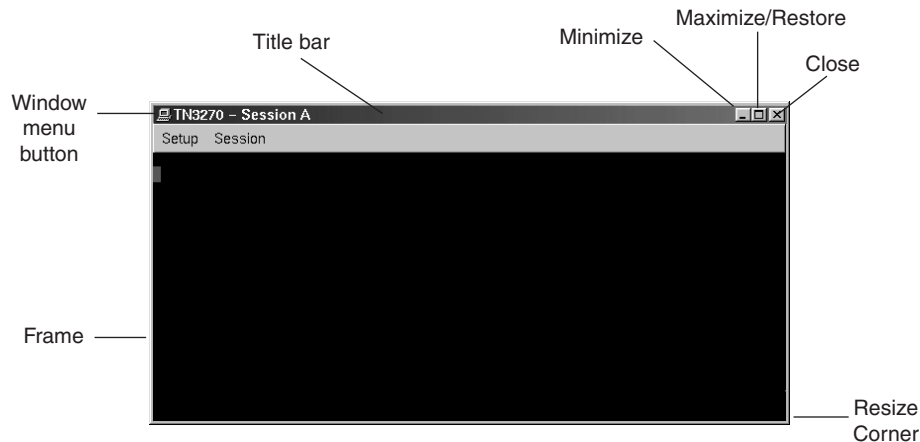
TN5250 Setup

104-key:
Alt-Shift-s
Shift Esc

122-key:
Alt-Shift-s
Left outboard pad, bottom
key on left

Anatomy of a window

Here is a typical NCT application window:



Most windows include these elements:

- **Window menu button** – Provides modification tools for the window (Restore, Move, Resize, Minimize, Maximize and Close).
- **Minimize button** – Reduce the window to an application button in the Taskbar. To bring the window back up, click the application button on the Taskbar.
- **Maximize/Restore button** – Expand the window to fill the current workspace, or restore it to its previous size after maximizing.
- **Title bar** – Displays the name of the application. The title bar is also where the mouse pointer should be positioned in order to move the window.
- **Frame** – Changes color to indicate the focus window (that is, the one that's ready for input) on the workspace. The frame is also the area to grab to resize the window.
- **Resize corner** – Allows shrinking or stretching of the window.
- **Close button** – Some applications may use this convenient method of closing the window.

Using the Window Menu

To open an application's Window menu, click on the Window menu button in the window's upper left corner.

The Window menu allows you to:

- **Restore** the window's size (after maximizing or minimizing it).
- **Move** the window – the window will track the mouse pointer until the mouse button is clicked.
- **Resize** the window – as the pointer is moved outside the frame, an outline will track it until the mouse button is clicked.
- **Minimize** the window – reduces the window to an application button in the Taskbar. To bring the window back up, just click on the button in the Taskbar.
- **Maximize** the window – expands the window to fill the current workspace.
- **Close** – closes the application. An application can also be closed by *double-clicking* on the menu button.

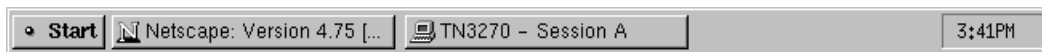


CAUTION: Selecting the Close item may immediately terminate the application running in that window *without* prompting you to confirm. Always remember to save your work before you click on Close!


Note: Some tabs or tool bar icons may be subdued or “grayed out”; these tasks are not accessible at this time.

Using the Taskbar


The Taskbar provides a quick and easy way to switch from one application to another and to restore applications to their normal size on the workspace.



The Taskbar includes the following:

- Application list button -  displays a menu of applications made available for your use by your system administrator.
- A label button for each application that is running. The label will appear whether the application is visible on the screen or in the minimized mode.

To start-up an available application:

1. Click the  button. The menu of applications will appear.
2. Select the application you wish to work with.

To switch to any running application, **left-click** on the application's button on the Taskbar. The application's window will be restored if minimized, brought to the front, and will become the focus window. **Right-click** will permit you to close applications. **Alt-Z** will allow you to toggle to any application.

Note: To access the start menu while in full-screen mode, hold the **Ctrl** key while pressing the Esc key. Press **Alt-tab** or **Alt-Shift-Tab** to cycle through applications, pressing the tab key repeatedly until the application you wish to bring to the front is displayed.

Chapter 3. Using Print Services

LPR/LPD print feature

LPR (Line Print Remote)/**LPD** (Line Print Daemon) is a print server protocol widely used on the internet for communicating between clients and servers. An LPR-enabled device (the NCT, for instance) requests a LPD-enabled device (usually a printer or print server) to print a specific print job. The NCT can act as an LPR-enabled device and/or an LPD-enabled device. Following are descriptions of how to configure the NCT for LPR/LPD.

Remote Printing must be configured to enable LPR printing for the following NCT applications:

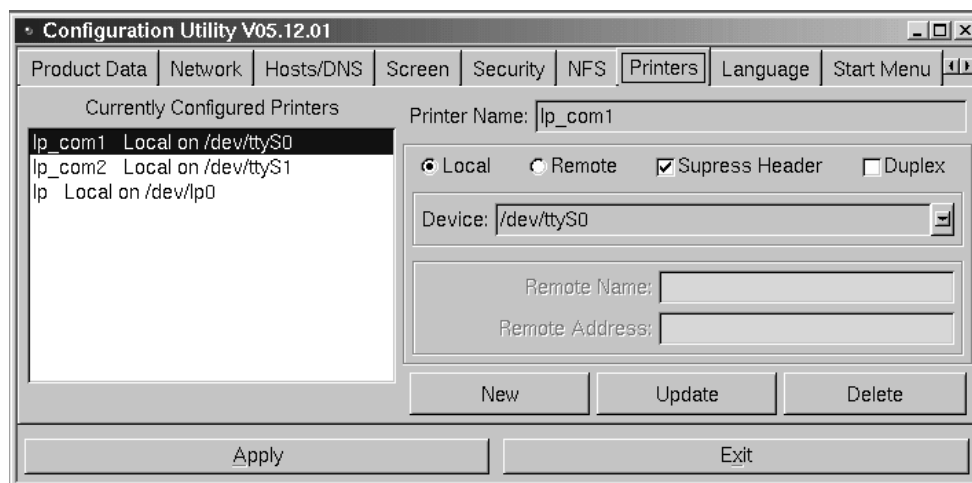
- TN3270E • 1451
- TN5250 • VT220
- TN5250EP • Netscape Web Browser

The NCT supports a total of nine remote printers. One of the printers is static-defined and should not be deleted. The remaining eight are user-defined. The static-defined printer is:

- **lp** – parallel port

Configuring remote printers

From the settings menu, select **General**. The Printer configuration panel is shown below:



- **Currently Configured Printers** – Click with the mouse to select a printer.
- **New** – Add a new printer definition. To add a new printer, fill in the appropriate field and click **New**.
- **Delete** – Delete an existing printer definition.

- **Printer Name** – User-defined field. This name should be a descriptive name for the printer.
- **Local** – the printer is attached to the parallel or USB port on the NCT.
- **Remote** – the printer is remotely attached on the LAN.
- **Suppress Header** – Disable printing of page header
- **Duplex** – Enable duplex printing
- **Device** – If the printer is locally attached, the device name is displayed in this field indicating that the printer is attached to the specified port.
 - **/dev/lp0** - parallel port
 - **/dev/null** - null port
 - **/dev/ttyS0** - serial port COM 1
 - **/dev/ttyS1** - serial port COM 2
 - **/dev/usb/lp0** - usb port (first)
 - **/dev/usb/lp1** - usb port (second)
- **Remote Name** – Queue name that print jobs are sent to from an LPR-enabled device (if required).
- **Remote Address** – The IP address of the remote printer.

Using the NCT as an LPR server

The NCT is configured to act as an LPR server.

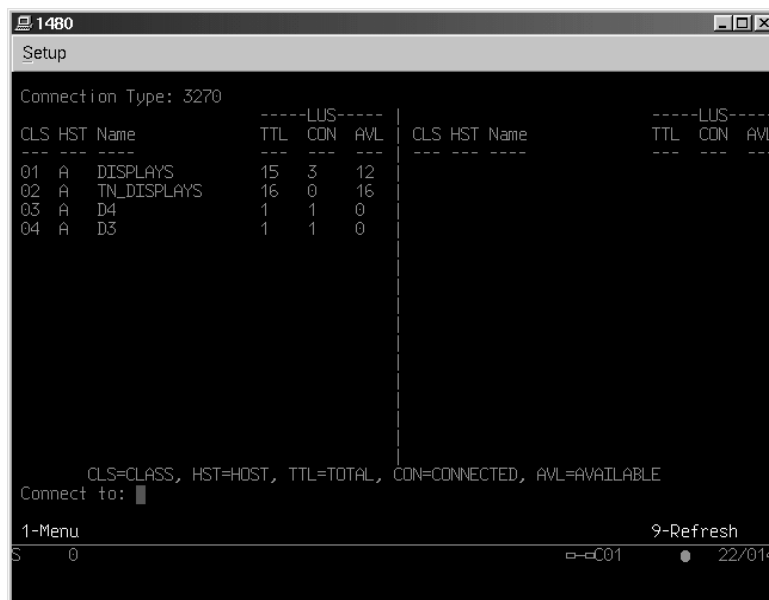
To have an NCT send to another NCT as print server, select an existing definition and making the following changes:

1. Select a Printer Name, such as NCT_rem_prtr.
2. In the Remote Name field, enter the name that was defined for a local Device on the NCT LPR server.
3. In the Remote Address field, enter the IP address of the NCT with the locally attached printer.

Chapter 4. 1480 CUT Emulator

The 1480 CUT Emulator is a 1480 Enhanced Function Display Emulator that offers a wide range of functions and applications for the traditional IBM 3270 terminal user.

The 1480 CUT Emulator can be used with a color monitor or a VGA monochrome monitor. For remote printing, a coax printer can be attached via the Visara controller, or hard copy of all data on the screen can be printed on an optional local screen printer or on a remote LAN printer.



Standard features

The 1480 CUT Emulator provides the following standard features:

Display screen features

- **Window Menus** – The window menus offer simplicity and ease of use for all setup functions.
- **Switchable Screen Formats** – The 1480 CUT Emulator supports four (4) screen sizes that can be selected from setup menus. The controller to which the 1480 CUT Emulator attaches must support the screen size used. Check with your system administrator.

Data entry features

- **Mono/DualCase Mode** – Allows characters to be displayed as all uppercase characters or as upper- and lowercase characters.
- **Mark Unprotected Field Indicator** – The 1480 CUT Emulator can be requested to mark unprotected fields with a special character.
- **Row/Column** – Displays the current cursor location on the operator status row.
- **Numeric Lock** – Allows a field to be defined to accept only numeric characters, plus the Period, Minus, and Dup keys. The comma may be substituted for the period on some international keyboard - controller functions.
- **Audible Alarm** – Sounds when a character is entered in the next-to-last character position of the screen (if the last character position is unprotected) or when the host system signals the terminal.
- **Entry Assist Function** – Facilitates the creation and editing of text such as memos, letters, and documents. The attached controller must support this function.

Printing features


- **Local Screen Print** – Allows a hard copy of displayed text to be made using the screen print function. Print quality, line density, and print pitch can be specified.
- **Coax Printing** – Allows printing to be directed to various printers on your network or controller.

Other features

- **Response Time Monitor** – Supports host-controlled transaction response time monitoring. This feature helps your organization's systems staff to analyze and improve the rate at which your terminal responds to your actions. The controller must be properly configured to support this feature.
- **Modifiable Keyboard** – Using the Keyboard Definition mode, the keyboard layout can be modified by interchanging and adding keycaps. The controller must be properly configured to support this feature.
- **Mouse-Pen** – Using the right mouse button, light-pen detectable fields can be activated in the 1480 emulation applications.
- **Light-Pen** – Light-pen detectable fields can be activated in the 1480 emulation applications.

Accessing your application program

To start the 1480 CUT Emulator:

1. Click the  **Start** button in the lower left-hand corner of the screen. The application menu will appear.
2. Click **1480 Emulation** from the application menu.
3. Call up an application by one of the following methods:
 - Using the Attention, PA, F or PF, Clear, or Enter key,
 - Select from your system's menu of applications.

Contact your supervisor or system administrator for specific information on how to access your application(s).

The application program can guide your data entry process by:

- limiting numeric fields to digits, period, DUP and minus
- intensifying fields where you can enter data
- covering confidential information so it does not appear on your screen.

Note: To enter nonnumeric, uppercase characters in numeric fields, press Shift.

Moving the cursor

Position and move the cursor on the screen by using the keyboard. Efficiency on data entry tasks can be significantly increased by using the following keys for positioning the cursor:

To move the cursor:	Press key(s):
Up on the screen	↑
Down on the screen	↓
Horizontally left	←
Left two positions at a time (Note: When the cursor moves beyond the edge of the screen, it "wraps" or reappears at the last character position of the previous line.)	Alt - ←
Horizontally right one position	→
Right two positions at at time (Note: When the cursor moves beyond the edge of the screen, it "wraps" or reappears at the first character position of the next line.)	Alt - →
To the first entry position on the next line (Note: When the cursor is at the last entry position on the bottom line of the screen, pressing the New Line key moves the cursor to the first entry position at the top of the screen.)	New Line
Backward	Backspace
To the first available character position on the screen	Home

If the application uses a formatted display screen, the following three additional keys can be used to position the cursor:

To move the cursor:	Press key(s):
Forward to the first entry position of the next entry field	Tab
Back to the first entry position in the current or preceding entry field	Back-tab
To the first entry position in a subsequent entry field	Skip

For applications using unformatted display screens, pressing the Tab, Back-tab, or Skip key returns the cursor to the first available character position on the screen.

Entering and editing data

All the keys described in *Moving the Cursor* can be used to enter and edit data input. In addition, the following keys can be used to add or delete information:

To perform this function:	Press key(s):
Enter Insert mode for adding characters at the cursor's current position	Insert
Exit Insert mode	Reset
Remove a character at the cursor's current position	Delete
Delete a word beginning at the current cursor position (Note: Delete Word is functional only if the control unit to which the display station is attached supports the Entry Assist feature.)	Delete Word
Erase all entry field positions from the cursor's current position to the end of field	ErEOF
Erase all entry field positions and move the cursor to the first available character position	ErInp
Repeat entered data and move the cursor to the first entry position of the subsequent entry field	Shift - Dup
Enter a character that marks the end of an input field	Shift - Field Mark

Note: Shift to uppercase characters by using Numeric mode, as well as pressing **Shift**. Press *either* **Shift** *or* **Shift Lock** to reverse Shift Lock.

Selecting data fields

The application program may be designed to present to you certain fields that can be selected for further processing by the application program. These fields are marked with a “?”.

To select a field, perform one of the following actions:

- Press the CrSel key
- Move the cursor to cover any character in the field or to cover the “?” and click the right mouse button.

“>” replaces the “?” associated with the field you select. If you accidentally select the wrong field, press the CrSel key or right mouse button to deselect it.

To send the field(s) to the application program for processing, do one of the following, depending on how the application program was designed:

- Press the Enter key.
- Press the CrSel key after positioning the cursor on an attention field. (Attention fields are marked with &’s and spaces.)
- Position the mouse cursor to point to the desired attention field and click the right mouse button.

Sending data

To send the displayed data to the host application before continuing to enter data:

1. Check to be sure that all fields required by the application have been filled.

Note: When a data character is entered in the next-to-last character position on the screen, the audible alarm sounds to remind you that the cursor is near the end of the screen. If data entry continues, the cursor “wraps” and reappears in the first available character position of the screen. Subsequently entered characters replace displayed characters, resulting in loss of previous entries.

2. Press the Enter key to send the displayed data to the host application.
3. Press the Clear key. This has the following effect:
 - Erases all displayed data on the screen
 - Returns the cursor to the first available character position
 - Signals the host application that a “clear” operation has occurred.

System Request variations

Depending on the online rules condition symbol that is displayed on the operator status row, you will be able to send system request messages. Press Alt - Sys Rq, for these results:

Operator Status Row Display:	Result:
A	Sends a message that your unit may be malfunctioning or that a test request message is on the screen.
B	Clears the display and switches the display station between the control (or master) program and application programs.

Contact your supervisor for additional information about this key combination.

Program Access (PA) function

The application program in use determines specific functions of the Program Access (PA) key. Contact your supervisor for further information.

Function (F or PF) keys

The application program in use determines specific functions of the Function (F or PF) keys. Contact your supervisor for further information.

Monitoring response time

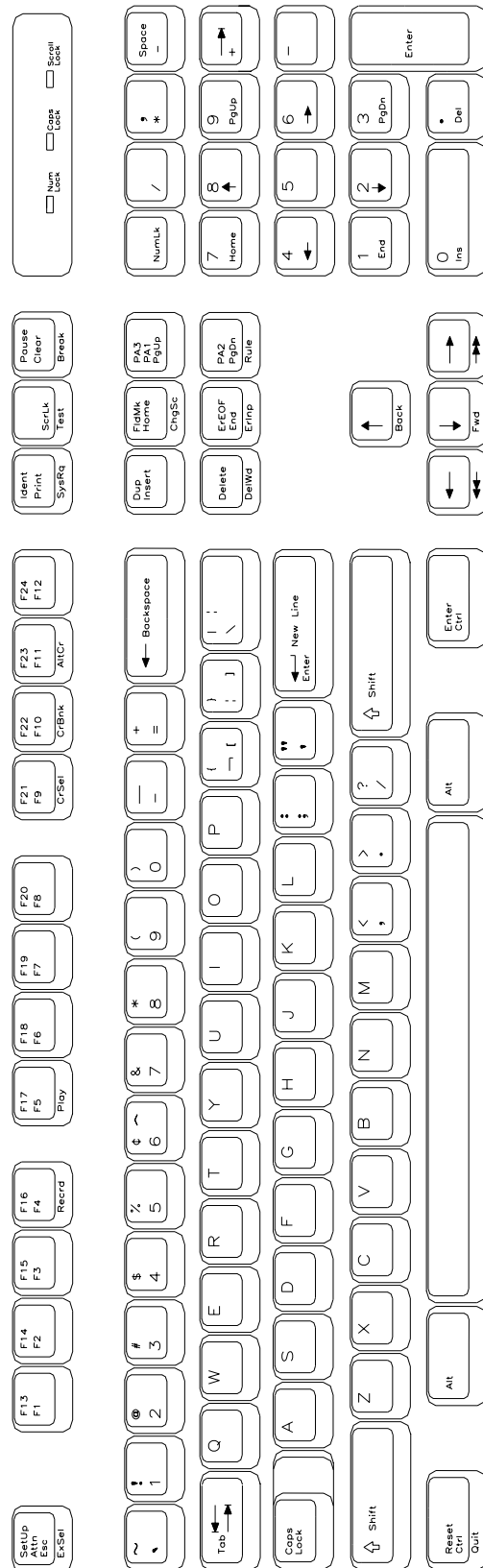
At times you may be requested to assist in monitoring and analyzing the speed of system response at your terminal, or you may wish to collect this data on your own.

Note: The attached controller must support this function.

To start the Response Time Monitor:

1. Press the ExSel key
2. Press the F19 key.

To stop the Response Time Monitor, repeat the sequence above.



Configuring the 1480 CUT Emulator

The configuration function enables the environment to be set up to suit your needs and work habits while working in CUT emulation mode.

Defining and selecting features

To bring up the 1480 CUT Emulator configuration screen:

1. Click **Setup** to open the 1480 Setup menu.
2. Click **Screen**. The 1480 Screen Setup screen is shown below:

Screen Setup

Mod Size

- ☒ Mod2 24 x 80
- ☐ Mod3 32 x 80
- ☐ Mod4 43 x 80
- ☐ Mod5 27 x 132

Case

- ☒ DualCase
- ☐ MONOCASE

☐ Dual Screen

☐ Controller Step Key = ChgSc

☐ Increase Session Delay

Cursor

- ☐ Underline
- ☒ Block
- ☐ Blink

Miscellaneous

- ☐ Full Screen Mode
- ☐ Partitioning
- ☐ Mark Unprotected
- ☒ Row/Column Indicator
- ☒ Coax Indicator
- ☒ Base VPD
- ☐ Disable Color Override

Title Bar

☒ 1480 ☐ + Session Name

OK Cancel

- **Mod Size** – Select the mod required by the design of the application program. Applications are designed to use one of the above mods, based on the number of rows per screen and characters per row, respectively. The default is Mod 2.
- **Case** – Select **DualCase** for upper and lower case characters. Select **MONOCASE** for all characters displayed as upper case letters.
- **Cursor** – Choose either an underline cursor or a block cursor. Select **Blink** for a blinking cursor.
- **Full Screen Mode** – Select to open the 1480 application in Full Screen Mode. 1480 must be closed and reopened for this setting to become effective.
- **Partitioning** – This feature is not currently implemented.
- **Mark Unprotected** – Select to display a special symbol in each unprotected field on the screen. This enables you to recognize locations where keystrokes can be entered.

- **Row/Column Indicator** – Select to display the current cursor location on the operator status row. Note that the location is determined by the application program on the host system.
- **Coax Indicator** – Select to turn the coax indicator on. When this feature is on:
 - A filled circle is displayed in position 71 of the status row to indicate an active coax line.
 - An open circle indicates no coax activity.
 - A blinking circle indicates the very slow poll cycle of a coax line being disconnected then reconnected. In that case, power down the NCT unit for at least 10 seconds before turning the power on to reestablish communications, or use the 1480 Miscellaneous Menu described later in this chapter.

The coax indicator overrides other status line information in position 71 because it is normally used as a diagnostic feature.

- **Base VPD** – Select to enable the basic Vital Product Data functionality.
- **Disable Color Override** – Normal base color supports four colors - blue, green, red and white. A command from the controller can force the display to two base colors, green and white. Enabling this button causes the 1480 emulator to ignore the controller command and to display all four base colors.
- **DualScreen** – Enables the 1480 DualScreen feature. (See *Configuring Dual Screen Mode* later in this chapter for details on this and the following two options.)
- **Controller Step Key = ChgSc** – Enables Alt - ChgSc as the controller session step key.
- **Increase Session Delay** – Increases the delay between changing sessions.
- **Title Bar** – Select to determine what will be visible in the panel title bar. A custom Session Name may be entered in the text field.

1480 Miscellaneous

Normally the 1480 emulator is running with the coax communications active over the coaxial cable to the mainframe host controller. For instances where the user may want to change a configuration item such as keyboard type (104 to 122) or mod size (Mod 2 to Mod 4), this screen provides the ability to make modifications to the emulator without powering off the NCT and then powering it back on.

The user may make all the desired menu changes first. Some of the menu items such as the two mentioned previously only take effect during the initial exchange of data with the controller.

Restarting the 1480 Emulator

1. Click **Setup** in the upper left-hand corner of the screen to open the 1480 Setup menu.
2. Click **Miscellaneous**. The 1480 Miscellaneous screen is shown below.



3. Click **Coax Stop**.
4. Click the **OK** button. This stops the 1480 from responding to the controller.



CAUTION: All data on the 1480 screen will be lost, along with the bridge data transfers being stopped!

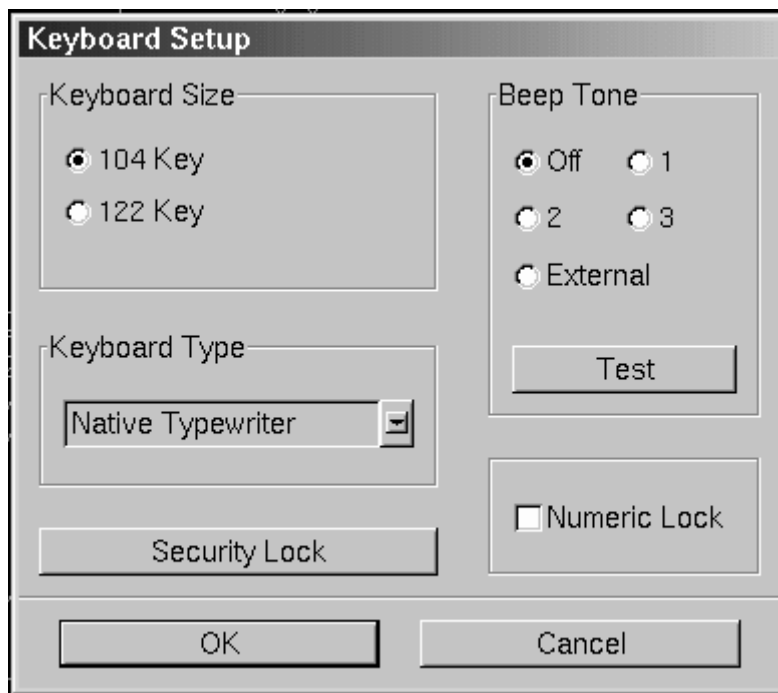
The 1480 screen data is erased and replaced by a large **X**. The operator symbol is placed in the status row along with another **X**. This shows that the communications have been halted.

5. Click **Coax Start**.
6. Click the **OK** button to restart the coax communications and initiate the exchange of configuration items with the controller.
7. Click the **Cancel** button to exit this panel.

Keyboard setup

To open the Keyboard Setup panel:

1. Click **Setup** to open the 1480 Setup menu.
2. Click **Keyboard**. The Keyboard Setup screen appears:



- **Keyboard Size** – Select either 104 or 122-key keyboard.
- **Keyboard Type** – Select type of keyboard.
- **Security Lock** – Click to open the Password Configuration screen. If a password has not been initially set, the Old Password field will be inactive and a new password may be entered. To activate the Security Lock or to enter the password when the Security Lock is active, enter the keyboard combination of Alt-Shift-Enter (or Newline).
- **Beep Tone** – Select the notification tone desired. Selecting **External** will require an external speaker to be connected to the unit.
- **Numeric Lock** – If supported by the server, will allow numeric keys only for numeric fields.

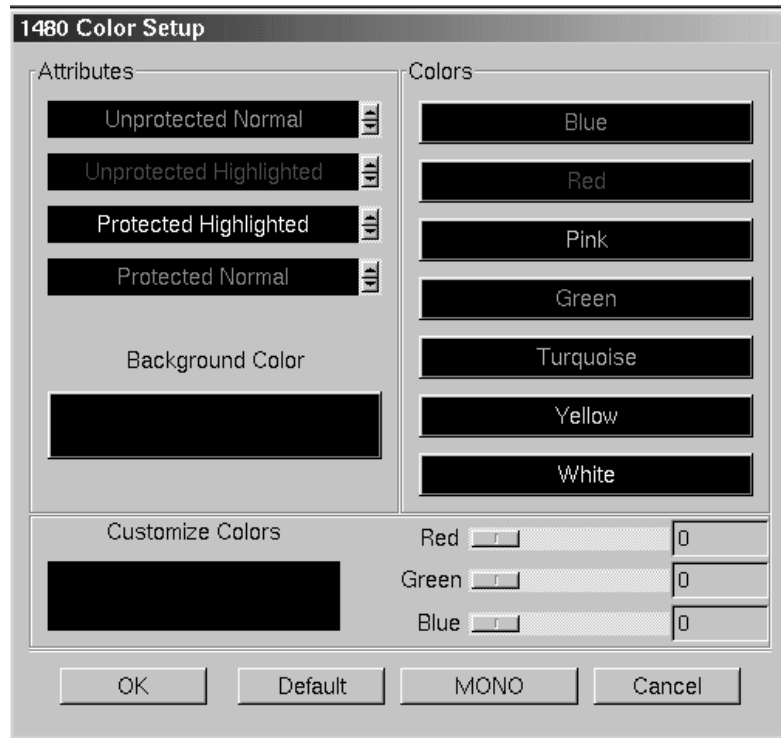
Click **OK** to save the changes and exit the screen, or **Cancel** to discard the changes and exit.

Note: If the keyboard size or type is changed, the coax must be stopped and restarted for the changes to become effective.

Color

To open the Color Setup Panel:

1. Click **Setup** to open the 1480 Setup menu.
2. Click **Color**. The Color Setup screen appears:

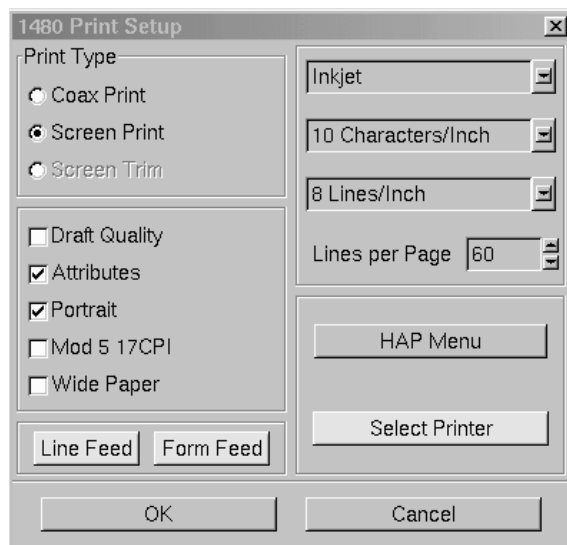


- **Attributes** – Use the arrows to select colors from the Colors list on the right. Select for protected, unprotected, normal and highlighted fields.
- **Background Color** – Use any or all of the three slider bars until the desired color shows in the Background Color box and as the background of the Color Setup screen.
- **Customize Colors** – Use any or all of the three slider bars to adjust the colors showing on the Colors list.

Click **OK** to save the changes and exit the screen, **Default** to return to the system's default settings, **MONO** to use a monochrome display, or **Cancel** to discard changes and exit.

Printer setup and printing

The 1480's screen-print may be directed to either a local printer, a remote LAN printer, or a coax printer. To initiate printing once printer setup is complete, press the Print key. To access the Printer Setup screen (shown below) select **Printer** from the 1480 Setup menu.



Print type

- **Coax Print** – Sends the print request to the controller.
- **Screen Print** – Prints the entire contents of the application window.
- **Screen Trim** – Prints the user-selectable area within the application window. (This feature is not currently implemented)
- **Printer Type** – Specifies the printer driver to use when printing. Options are:
 - Plain
 - HP Laserjet
 - Epson Inkjet
 - Proprinter
 - Postscript

Note: Printing options found on this configuration panel may vary depending on the printer type selected.

- **Draft** – Prints draft quality when selected. Otherwise printing is letter quality.
- **Attributes** – If selected, prints intensified characters as bold and underlined when required.
- **Portrait** – If enabled, prints in Portrait mode. If disabled, prints in Landscape mode.
- **Wide Paper** – If enabled, allows printing of more than 80 characters per line. This setting is generally used when Proprinter is selected as the Printer Type.

- **CPI Selection** – Specifies the number of Characters Per Inch to print. Options are 10, 10.5, 12, and 17 CPI.
- **LPI Selection** – Specifies the number of Lines Per Inch to print. Options are 3, 4, 6, 8, and 8.4 LPI.
- **Lines per page** – Specifies the number of Lines per Page to print. Selectable range is 0-255.
- **Line Feed** – Sends an immediate Line Feed to the selected printer.
- **Form Feed** – Sends an immediate Form Feed to the selected printer.
- **HAP Menu** – Displays the HAP configuration menu. The HAP menu button is gray when HAP is disabled and green when enabled.
- **LPR Menu** – Displays the LPR configuration menu. The LPR menu button is gray when LPR is disabled and green when enabled.

Coax printer assignment

To see how the 1480 printer is currently assigned, press Alt - Ident. The Assign Printer condition symbol (☐-☐) will display on the operator status row.

Assign Printer condition symbol:	Indicates this type printer:
XX	Coax, where xx is the printer's ID number (i.e. >>> <u>M</u> <u>C</u> <u>C</u> <u>1</u> _ <u>0</u> <u>0</u> <u>8</u>)
--	Coax, unassigned

To assign or change a Coax printer:

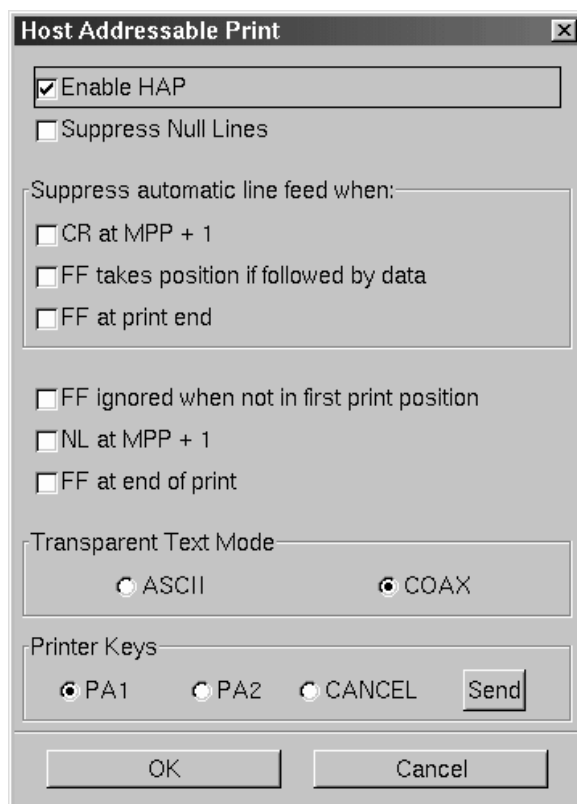
1. Consult your supervisor for an available coax printer's ID number.
2. Enter the two-digit number. The two-digit number replaces the underscore positions, or the assigned coax printer's ID number, on the operator status row.

Once the printer's ID number is entered, the sequence ends automatically.

If an invalid ID number is entered for a coax printer, the "What?" symbol (X ?+) appears on the operator status row. If this occurs, press Reset and try another number.

HAP Menu

The Host Addressable Print feature enables the host to send print requests to the attached printer. LU2 (screen) prints are always formatted by the display according to the printer menu selections. To enable or disable HAP, click the **HAP Menu** button from within the 1480 Print Setup Screen. The Host Addressable Print configuration screen will appear:



- **Enable HAP** – Select to enable the HAP feature.
- **Suppress Null Lines** – Selection of this item will cause null lines to be removed from formatted (40/64/80 CPI) HAP LU3 prints. Null lines are lines that contain only non-printable characters (such as nulls, attributes or alphanumeric characters in a non-print field).
- **Suppress automatic line feed when:**
 - **CR at MPP + 1** – If this option is selected, when the printer reaches the Maximum Print Position + 1 (the end of the print line), the carriage returns to the beginning of the line without a line feed. The next printed characters will overwrite the current line of printed characters. If this option is not selected, (the default), when the printer reaches the end of the line, the carriage returns to the beginning of the line and drops down one line.
 - **NL at MPP + 1** – If this option is selected, the printer does not execute a line feed if there is a new line command at the Maximum Print Position + 1 (the end of the print line). The printer begins printing on the next line. If this option is not selected (the default), when the printer reaches the end of the line, it executes two line feeds.

- **FF at print end** – If this option is selected, the printer does not execute a line feed after a form feed. If this option is not selected (the default), the printer executes a line feed after a form feed. Characters printed on the new page begin on the second line.
- **FF ignored when not in first print position** – If this option is selected, a form feed character in the first position or next to the maximum print position is executed while form feed commands in any other positions are printed as blank characters and are otherwise ignored. If this option is not selected, all form feed commands are executed.
- **FF takes position if followed by data** – If this option is selected, and if the form feed character is not at the end of the print data, a form feed is executed and a blank character is printed in the first position on the next page. Subsequent printing starts in the second position on the new page. If this option is not selected, the form feed character is not printed as a blank character and subsequent printing starts in the first position on the new page.
- **FF at end of print** – If this option is selected, the printer ejects the last printed page and subsequent printing begins on the new page. If this option is not selected, the last page is not ejected and a line feed is executed. Subsequent printing begins on the new line of the current page.
- **Transparent Text Mode**
 - **Coax** – data included in an SCS Transparent Mode command (35H) is printed in the LU1 environment as follows:
 - Valid EBCDIC characters are translated and printed normally.
 - Invalid EBCDIC characters (SNA character string [SCS] commands) are printed as hyphens.
 - **ASCII** – all data included in the command is sent through to the printer untranslated. The following setup values are not sent to the printer during initialization:
 - Chars/Inch
 - Lines/Inch
 - Quality
- **Printer Keys** – Allow the operator to send either a PA1, PA2, or Cancel to the application. The operator selects one of the functions (**PA1**, **PA2**, or **Cancel**) and then clicks the **SEND** button. (**Cancel** is effective only in LU1 type print sessions.)

Click **OK** to save the changes and exit the screen, or **Cancel** to discard the changes and exit.

Note: For changes to the HAP Menu to become effective, the 1480 must be restarted via the Miscellaneous Menu, or by turning the unit off and back on again.

Select Printer

To configure LPR, select the **Select Printer** button from within the 1480 Printer Setup Screen. The LPR Setup panel is shown below:



- **Printer scroll window** – used to select a printer. A blue background indicates the printer is selected.
- **Local Name** – User-defined name of the printer.
- **Remote Name** – Queue name that print jobs are sent to from an LPR-enabled device.
- **Remote Address** – IP address of the selected printer.

Click **OK** to save the changes and exit the screen, or **Cancel** to discard the changes and exit.

Note: For changes to the Select Printer Menu to become effective, the 1480 must be restarted via the Miscellaneous Menu, or by turning the unit off and back on again.

Dual Screen feature

The dual screen feature is provided by a special software program on the main logic board. With the NCT Display Station in 1480 Emulation mode, you can display and operate two sessions on one monitor in either a side-by-side format or a zoomed session (that is, one of the two sessions occupies the entire display surface and you toggle between the two sessions). Fields can also be copied from one session to the other. Dual screen sessions are supported on a display configured as a Mod 2, 3, or 4.

Configuration requirements

To support Dual Screen mode, the controller must be configured for two or more logical sessions on the display terminal's port. In addition, PC File Transfer mode must be set for those ports that use the Mark/Paste function of the NCT.

The NCT must be configured as follows to be able to exercise the enhanced dual screen features:

- The NCT 1480 Emulator must be in either Mod 2, 3, or 4 mode with Partitioning deselected. (See *Defining and Selecting Features* earlier in this chapter.)
- Host Addressable Printing must be disabled.
- The NCT must be configured for video mode of 1024 x 768.

Note: Only 122-key keyboards are supported.
The light pen is NOT supported in Dual Screen mode.

Configuring Dual Screen mode

From the 1480 CUT Emulator application:

1. Click **Setup** to open the 1480 Setup menu.
2. Click **Screen**.
3. Click the **Dual Screen** button (a green button indicates that Dual Screen mode is enabled).
4. If the Controller Session Step Key is Alt - ChgSc (most 3174s), click the **Controller Step Key** button to enable it. If the controller is configured for the Session Step Key to be Alt - Insert (most 1174s will be configured this way) DO NOT click on the Controller Step Key button.
5. Click **OK** to save changes.

Note: If later operation of Jump and Swap keys seem to not work correctly every time, there may be a need to increase the delay between changing sessions. Click the **Increase Session Delay** button to enable it.

Starting Dual Screen mode

After enabling Dual Screen mode the first time, the 1480 emulator will need to be restarted. From the 1480 CUT Emulator application:

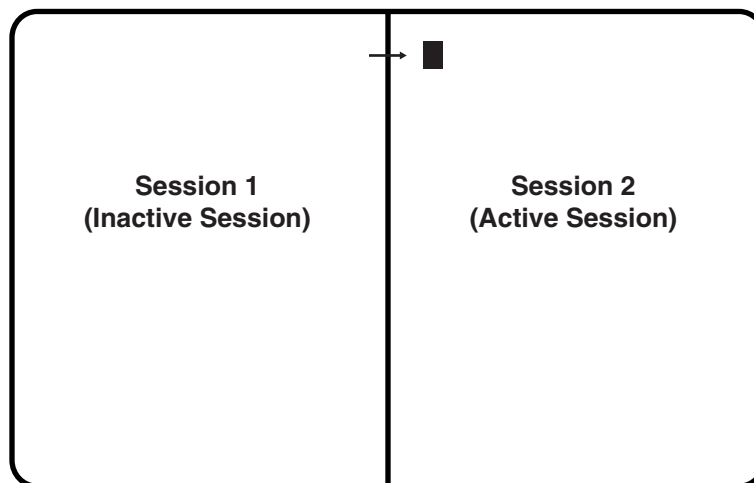
1. Click **Setup**.
2. Click **Miscellaneous** to open the 1480 Miscellaneous screen.
3. Click **Coax Stop**.
4. Click **OK**.
5. Click **Start**.
6. Click **OK**. The coax data should appear in approximately 3 seconds (13 seconds if Increase Session Delay is enabled).
7. Click **Cancel** to close the 1480 Miscellaneous panel.
8. Close the 1480 CUT Emulator application. When it is reopened, there should be a display with two sessions of data side by side.

Active and Suspended Screens

Dual Screen mode can be used to simultaneously display two host sessions. Because two or more sessions must be managed, one session is selected as the active session and the other as the inactive or suspended session.

A highlighted arrow (← or →) is displayed on the separator line at the cursor row to help find the cursor and point to the active session.

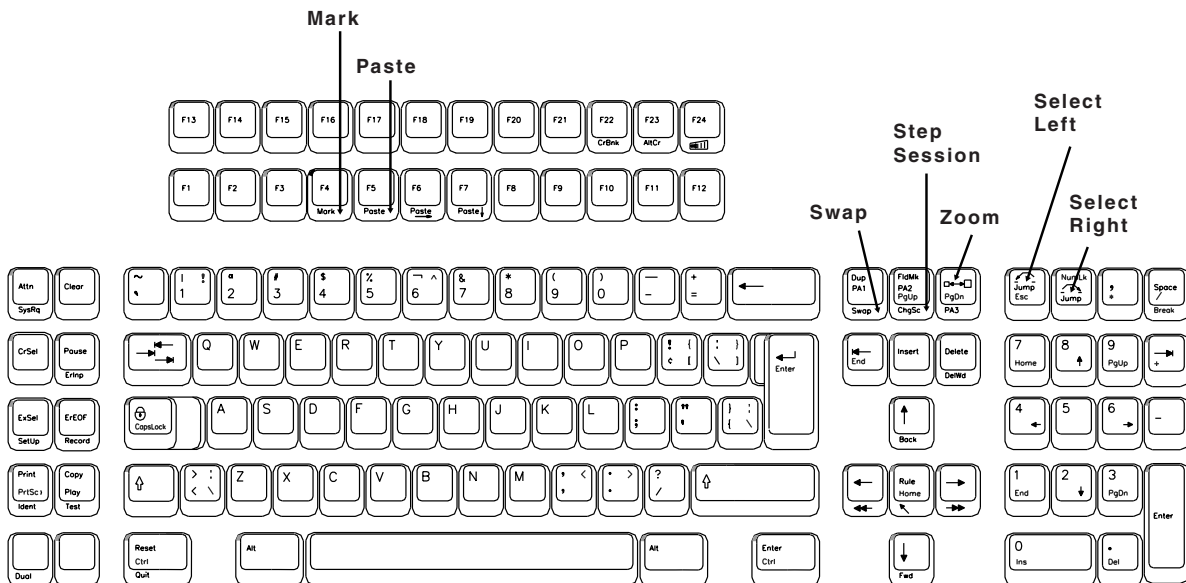
Two Sessions in Side-by-Side Format



Key assignments

Only the 122-key keyboard is supported for Dual Screen mode.


122-Key Dual Screen Keyboard Keys



Dual Screen Mode enhancements


The following commands and features are available in Dual Screen mode.

Zoom


Press the Zoom key () to alternate the display between unzoned (side-by-side) format and zoomed (normal) format. The zoomed format is identical to the standard Mod 2, 3, or 4 format. There is only one unzoned format for all three model types.

The zoomed session is always the currently active session. When the terminal is unzoned, both sessions are displayed.

Select left

Press the Select Left key () to position the cursor in the session on the left side of the display when the display is in side-by-side format. The Select Left key operates in zoom and side-by-side modes. The session on the left side is now the active session and receives immediate screen updates. The session on the right side is “frozen,” which means it does not display new screen updates until it becomes the active session. The Select Left key has no effect if the left side session is already active.

Select right

Press the Select Right key () to position the cursor in the session on the right side of the display when the display is in side-by-side format. The Select Right key operates in zoom and side-by-side modes. The session on the right side is now the active session and receives immediate screen updates. The session on the left side

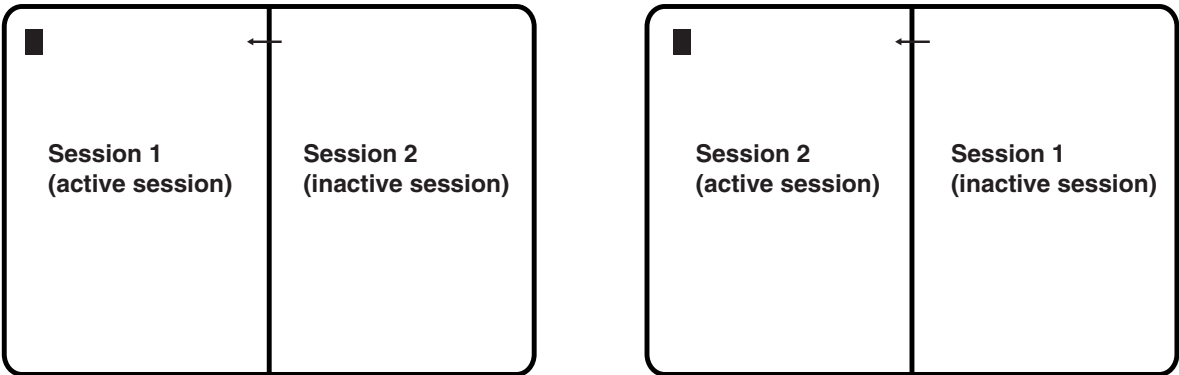
is “frozen,” which means it does not display new screen updates until it becomes the active session. The Select Right key has no effect if the right side session is already active.

Step Active session

Press and hold the Alt key while pressing the ChgSc key to change the active session to make the next highest session the active session. The cursor does not change sides and the session that is not selected is not affected.

For example, suppose three sessions are available. If Session 2 is the active session (the cursor is in Session 2) and is on the left and Session 1 is on the right, press the Alt - ChgSc key combination to increment the left side to Session 3. Session 3 displays on the left side and has the cursor. Session 1 is still on the right side. If the Select Right key is pressed, Session 3 is still displayed on the left and Session 1 is still displayed on the right, but now Session 1 has the cursor.

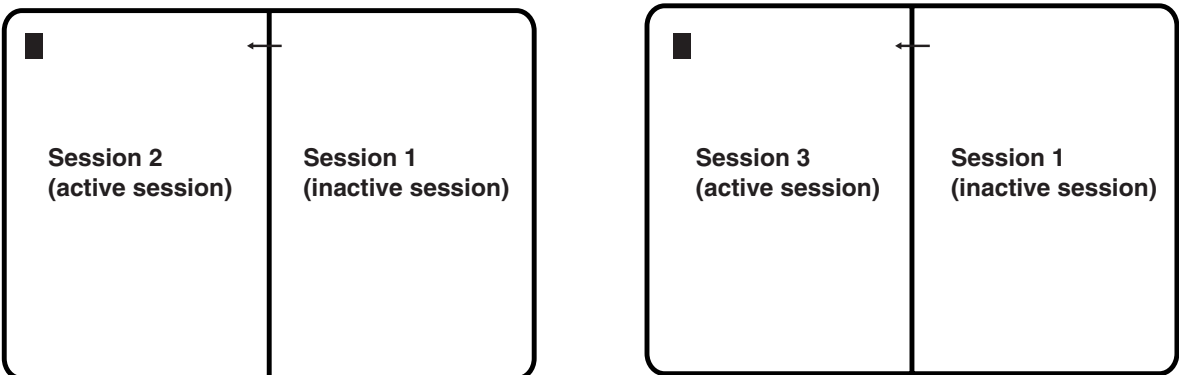
Example of Step Active Session



Swap session

Press and hold the Alt key while pressing the Swap key to switch sessions without moving the cursor. For example, in side-by-side mode, if the left session is the active session (and has the cursor), press the Alt - Swap key combination to move the left session to the right and the right session to the left. The session on the left is still the active session and has the cursor.

Example of Swap Session



Mark

To select a field as the source field for a subsequent paste operation, position the cursor anywhere within the field and hold down the Alt key while pressing the F4 key (Mark). See *Mark/Paste* below for a complete description.

Paste

To select a field as the target field and paste source data into that field, move the cursor to the target field and hold the Alt key while pressing the F5 key (Paste). The data in the source field is pasted into the target field. If there is already data in the target field, that data is overwritten with the data from the source field. See *Mark*, above, for instructions on how to select a source field. The target field cannot be in the same session as the source field. See *Mark/Paste* below for additional information about mark and paste.

Mark/Paste

Use the Mark/Paste feature to copy data between sessions. With this feature, data can quickly be marked and pasted between fields in different sessions.

Mark field

The mark field is the field highlighted as the source data field. The data to be pasted must be within a displayed field. Data cannot be marked for pasting if it is in a nondisplayable field. Data can be pasted from protected as well as unprotected fields. The mark field must be selected before selecting the paste field.

To select the source or mark field, position the cursor anywhere within the field, then press and hold down the Alt key while pressing the F4 key (Mark). The field is displayed in reverse video to indicate it is selected. If the Mark key is pressed while a field is already selected, the selected field is deselected. The field is also deselected after one of the Paste keys is pressed or if the session with the selected field is reselected with the Select Right or Select Left key. A session with a selected field is frozen and does not receive coax updates.






After selecting a field as the source or mark field, use the Select Left or Select Right key to make the opposite session the active session, then move the cursor to the target field.

Paste field

The paste field is the field that receives the data from the mark field and it cannot be in the same session as the mark field. The field that receives the pasted data must be an unprotected field. Standard data truncation rules apply when the paste and mark fields are of different lengths. If the paste field is longer than the mark field, data is replaced in the paste field only up to the length of the mark field. If the paste field is shorter than the mark field, data is truncated up to the length of the paste field. The data that has been pasted is temporary until an Aid key (Enter or F key) is pressed; if a Select Right or Select Left key is pressed before an Aid key, the pasted data is lost.

Walk through

The following is an example of how to start a dual screen after configuring the NCT as described in *Configuring Dual Screen Mode*, and after following the instructions for *Starting Dual Screen Mode*.

1. Press the Zoom () key to display two side-by-side sessions.
The cursor is displayed on the right side of the screen. The session on the right is now the active session.
2. Press the Select Left () key.
The cursor is displayed on the left side of the screen. The session on the left is now the active session.
3. Log on to a host application using the session on the left side of the display.
4. Press the Zoom () key.
The display consists of a standard, one-session format.
5. Press the Select Right () key.
The session from the right side of the display becomes the active session. The screen is still zoomed and the right session is the only session displayed.
6. Log on to a host application using the selected right session, which is the only session displayed. While the logon is processing, go to Step 7.
7. Press the Zoom () key.
The display unzooms and consists of the side-by-side format. Wait for logon processing to complete.

Screen Print mode

Follow these steps to perform a screen print in Dual Screen mode:

1. Position on the left the session to be printed, using the Swap and/or Step keys if needed.
2. Print the screen using the normal screen print commands.

Chapter 5. 1490 Twinax Emulator

The 1490 Twinax Emulator is designed to provide a wide range of functions and applications. Data messages are communicated between the emulator and the System/3X or AS/400 through a twinax cable up to 1500 meters long. The 1783 equipped with a 1490 emulator can be attached to any of the following processors and control units:

- IBM System/36
- IBM System/38
- IBM 5394 Control Unit
- IBM 5494 Control Unit
- IBM AS/400

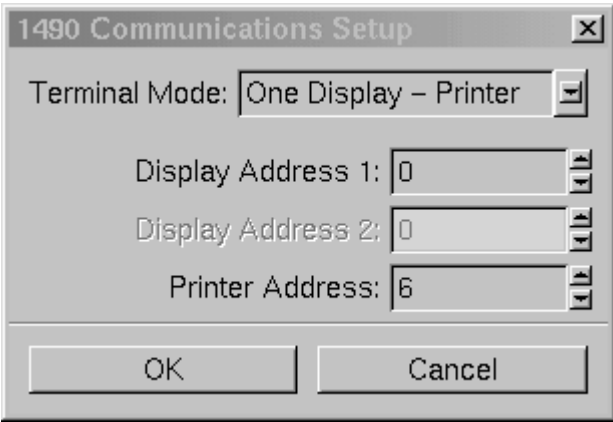
The 1490 supports 122-key and 104-key keyboards..

You can generate hard copy by attaching a twinax printer to the System/3X or AS/400 or by attaching a host addressable printer to the 1783 equipped with a 1490 emulator. The Local Screen Print feature enables you to make a hard copy of the displayed text.

Standard Features

- **Multiple Emulations** – The 1490 can emulate several different display types. Both monochrome and color displays can be emulated. For display stations attached to a System/36 or System/38, a 132-column color format can be selected.
- **Two-Host Sessions** – You can configure one host display sessions and one printer host session that run concurrently.
- **Full-Screen Setup Menus** – The full-screen setup menus offer simplicity and ease of use for all setup functions.
- **User Selectable Color Mixing** – With the color 1490, you can select the shades of the colors for the attributes.
- **Audible Alarm** – Sounds when the host system signals the display station.
- **MVP (Multivendor printers)** – The 1490 supports a wide variety of industry standard printers.
- **Optional Features**
- **US English**
 - 104-Key EBCDIC US English Typewriter
 - 122-Key 5250 US English Typewriter
 - 122-Key 3270 US English Typewriter

Communication Setup



Terminal Mode

Consult the system operator before changing this option.

The 1783 in 1490 mode can operate in two different terminal modes. By enabling up to two independent host sessions to be configured, each with a different address on the system, multiple host functions can be active simultaneously.

- **One-Display** – The 1490 operates as a single display station with one address. This is the default setting. Local screen printing is available.
- **One-Display-Printer** – Both the display and attached printer are logically connected to the host, each having a different address. In this mode, host addressable printing is enabled.

Display Address

The display address is the display station's logical address on the System/3X or AS/400 port. Ask the system supervisor for this address. The 1490 will not operate online until you enter this address. No default address is set at the factory.

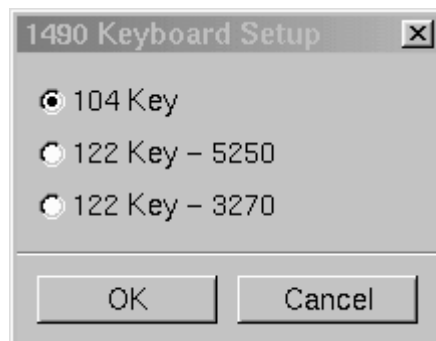
Selection	Description
00 through 06	Select an address from 00 through 06 . Do not assign the same address for a display and a printer.

Printer Address

The printer address is the printer's logical address on the twinaxial cable originating at the System/3X or AS/400. No default address is set at the factory. Ask the system supervisor for this address. This option is available only if the display station is operating in **One-Display-Printer** mode.

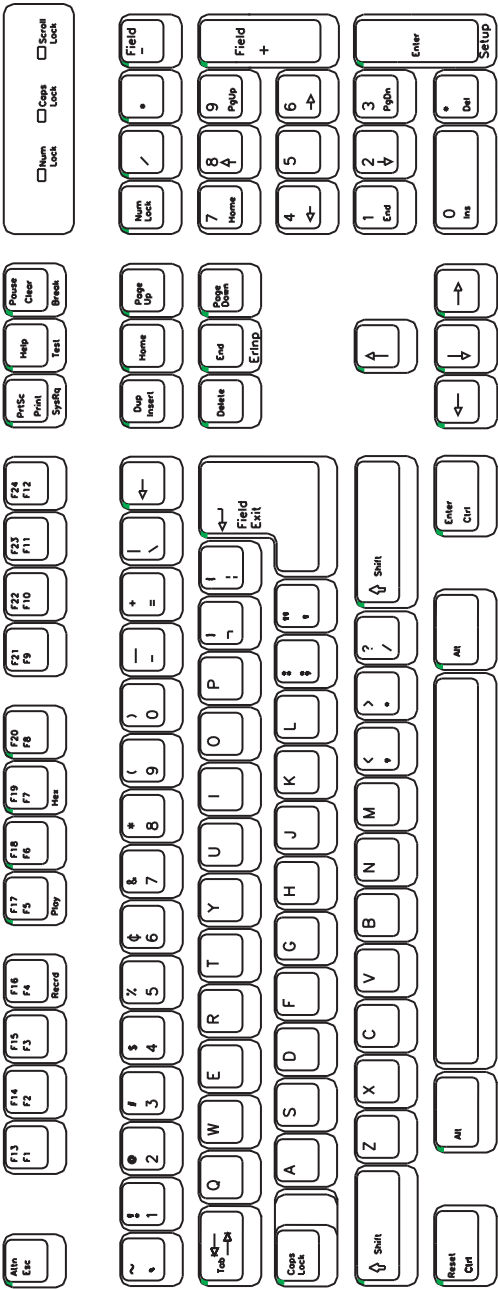
Selection	Description
00 through 06	Select an address from 00 through 06 . Do not assign the same address for a display and a printer.

Keyboard Setup

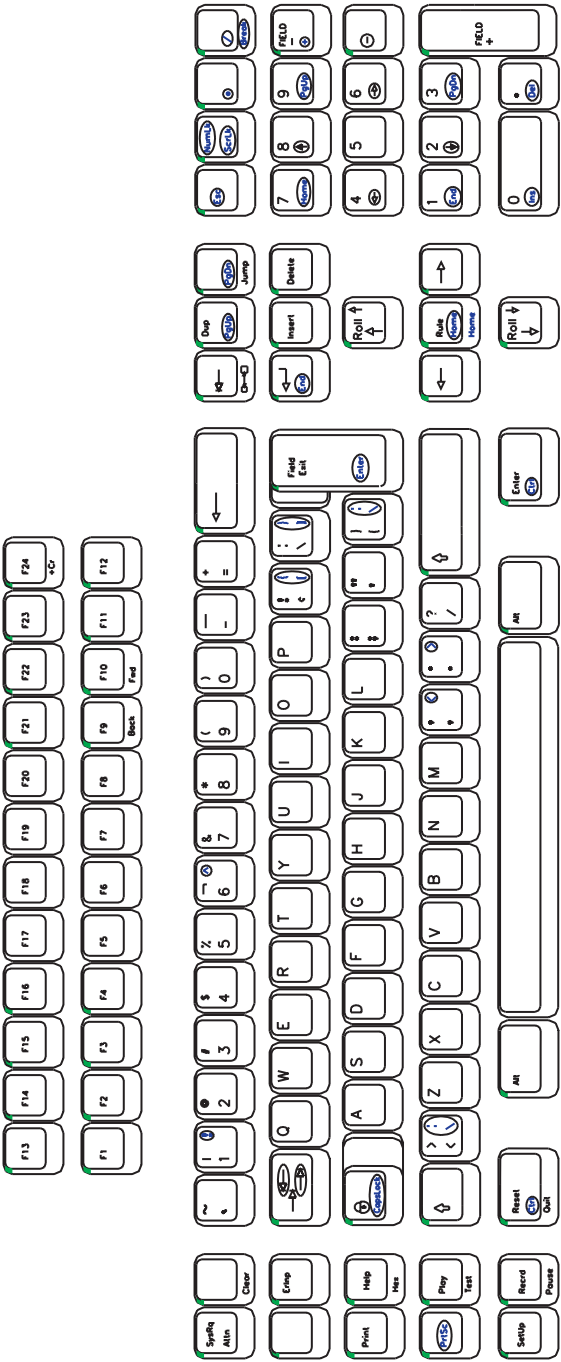


Use the following table to determine which keyboard you have.

Keyboard	Description
104	See keyboard diagram page 7-5.
122-5250	See keyboard diagram page 7-6.
122-3270	See keyboard diagram page 7-7.



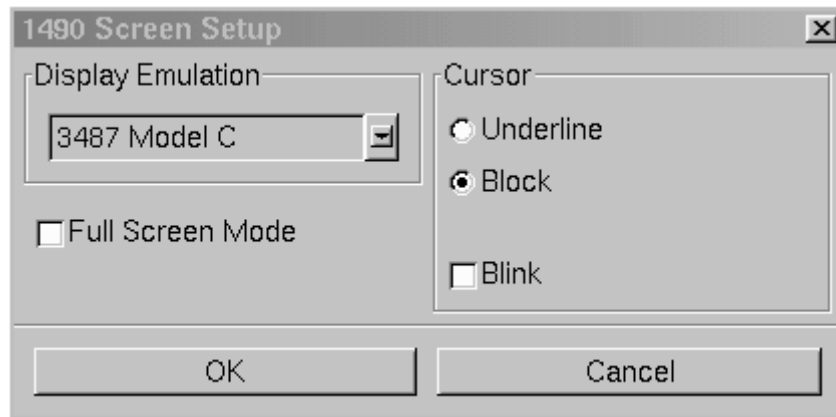
PC Keyboard with Twinax legends



TWINAX WITH PC LEGENDS
KB122 TW/PC TWINAX



Screen Setup



Display Emulation

Selection	Description
3477 Model C	132- column color display. This emulation supports Extended character attributes. Select this emulation for display station attached to an AS/400. This is the default setting for color monitors and is available only with color monitors.
3477 Model D	132 column monochrome display. This emulation supports Extended Character attributes. Select this emulation for display station attached to an AS/400. This is the defaults setting for monochrome monitors and is available with both color and monochrome monitors.
3197 Model D 3180 Model 2	132-column monochrome display. Select one of these emulations for 132-column support for display stations attached to a System/3X. This option is available with both color and monochrome monitors.
3196	80-column monochrome display. This option is available with both color and monochrome monitors.
3197 Model 2	80-column monochrome display. This option is available with only color monitors.
3487 Model C	132-column color display.
3487 Model G	132-column monochrome display.

By selecting one of the 132-column monochrome emulations, you can enable a 1490 display station attached to a System/3X to have 132-column capability, even though the System/3X does not support 132-column color displays.

The **Display Emulation** option is also useful when installing and configuring devices where system support services are not readily available (for example, at a remote site). You can select the emulation of the display that is already configured on your system without having to change the host configuration.

Cursor

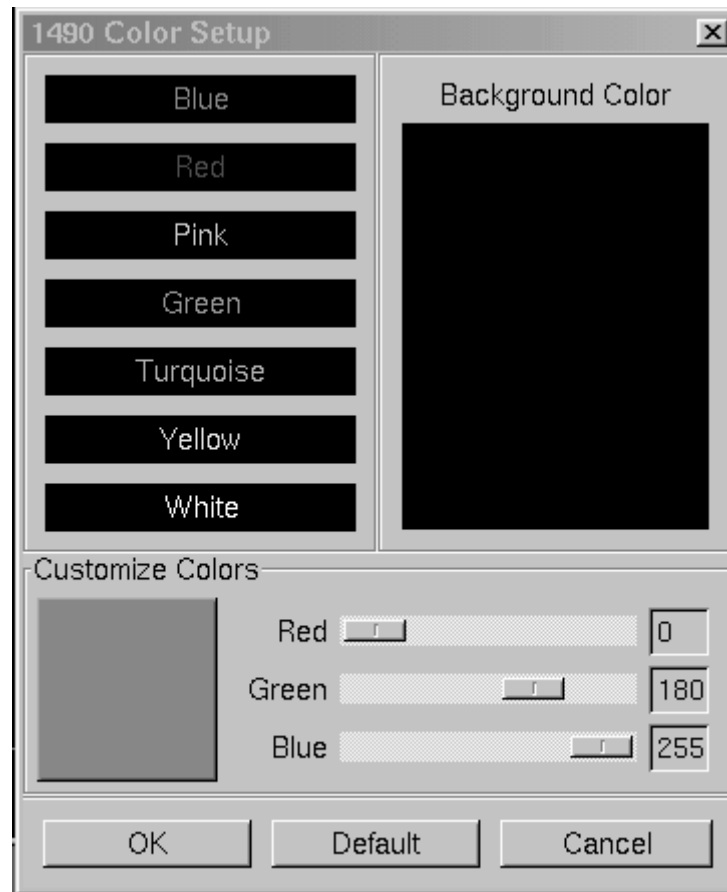
Selection	Description
Block	Selects a block (■). This is the default setting.
Underline	Selects an underline cursor (_).
Blink	When selected the cursor will blink. Otherwise the cursor is solid.
Full Screen	Select full screen mode. The menu bar will be hidden at the next power on reset. The menu bar can be unhidden by depressing the "setup" key on a 122 key keyboard or "Alt-numeric keypad enter" on a 104 key keyboard.

Note: Underline and Block cursor mode are mutually exclusive.

Full Screen Mode

Selection	Description
Full Screen	Select full screen mode. The menu bar will be hidden at the next power on reset. The menu bar can be unhidden by depressing the "setup" key on a 122 key keyboard or "Alt-numeric keypad enter" on a 104 key keyboard.

Color Setup



- **Colors** – Use to select a color you desire as background or designated text.
- **Background Color** – Use any or all of the three slider bars until the desired color shows in the Background Color box and as the background of this screen.
- **Customize Colors** – Use any or all three slider bars to adjust the colors showing on the color list.

Printer Setup

1490 Printer Setup

Selected Printer Type

System Printer

Printer Type

HP LaserJet

Printer Emulation

5219

Select Printer

ASCII PassThru

Delimiter

Off

☐ Draft Quality

☐ Portrait

☒ Attributes

☐ Wide Paper

☐ Mod 5 17CPI

Characters per Inch

17 characters per inch

Lines per Inch

8 lines per inch

Lines per Page: 0

Form Feed

Line Feed

OK

Cancel

The printer menu sets the printer parameters and controls the appearances of the printed text.

The LPR menu can be used to direct the print to either a local or network printer. Screen print and system print destinations are defined by this panel.

Attached Printer Type

The table below lists the printer type supported for each printer.

Menu Option	Printer types	
PRO-I/II	IBM Proprinter, Proprinter II and compatibles	Download character support is required for international characters. This is the default setting.
HP-LASER	HP Laser Jet II, Laser Jet II and compatibles	Uses Roman-8 symbol set for best font support. Font cartridges required for support of nonresident fonts.
EPSON-LQ	Epson LQ series printers and compatibles	Download character support required for international characters.
PLAIN	TTI	

Printer Emulation

The table below lists the printer emulations supported for each printer type.

Selection	Printer type	Description
5219	PAGE-II HP-LASER	Used for sophisticated word processing tasks that require font selection, automatic justification, bolding, underlining and overstriking. Supported only on laser printers and advanced 24-wire dot matrix printers.
4214	PRO-I/II HP-LASER EPSON-LQ	Used for general purpose printing. This emulation supports system control of some printing parameters, such as characters per inch, lines per inch and print quality. This is the default setting.
5256	PRO-I/II HP-LASER EPSON-LQ	Provides basic printing for systems that do not support the other printer emulations.

Characters per Inch

Selection	Description
10,12,17	Select a numerical value, 10, 12 or 17 characters per inch for the character density. 10 is the default setting for local printers.
10.5	Forces the text to be printed at 10.5 characters per inch. This enables 80 characters to be printed on a line of A4 paper.

Lines per Inch

Selection	Description
3, 4, 6, 6.6, 8.4	Select a numerical value, 3, 4, 6, 6.6, 8.4 lines per inch, for the character density. 6 is the default setting for local printers.

Select Printer Menu

To configure LPR, select the **Select Printer** button from within the 1490 Printer Setup Screen. The LPR Setup panel is shown below:



- **LPR scroll window** – used to select an LPR printer. A blue background indicates the printer is selected.
- **Local Name** – User-defined name of the printer.
- **Remote Name** – Queue name that print jobs are sent to from an LPR-enabled device.
- **Remote Address** – IP address of the selected printer. Click **OK** to save the changes and exit the screen, or **Cancel** to discard the changes and exit.

Note: For changes to the LPR Menu to become effective, the 1490 must be restarted via the Miscellaneous Menu, or by turning the unit off and back on again.

1490 Miscellaneous

Normally the 1490 emulator is running with the Twinax communications active over the Twinaxial cable to the mainframe host controller. For instances where the user may want to change a configuration item such as keyboard type (104 to 122), this screen provides the ability to make modifications to the emulator without powering off the 1783 NCT and then powering it back on.

The user may make all the desired menu changes first. Some of the menu items only take effect during the initial exchange of data with the controller.

Restarting the 1490 Emulator

1. Click **Setup** in the upper left-hand corner of the screen to open the 1490 Setup menu.
2. Click **Miscellaneous**. The 1490 Miscellaneous screen is shown below.



3. Click **Stop Twinax**.
4. Click the **OK** button. This stops the 1490 from responding to the controller and the menu will be removed from the screen.



CAUTION: All data on the 1490 screen and unprinted data will be lost.

When 1490 screen data is erased the Miscellaneous panel will disappear and the cursor is placed in the upper right corner of the screen.

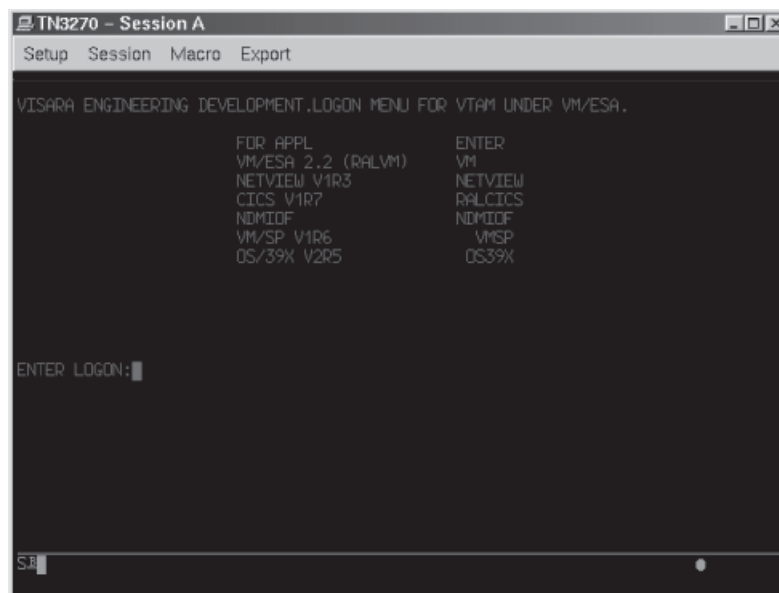
5. To open the miscellaneous menu, repeat steps 1 and 2.
6. Click **Start Twinax**.
7. Click the **OK** button to restart the Twinax communications and initiate the exchange of configuration items with the controller.

Chapter 6. Using TN3270, TN5250, TN5250EP, 1451, VT220 and VT3270

TN3270

What is TN3270?

Like Telnet, TN3270 enables access to programs running on remote hosts. Unlike Telnet, TN3270 provides the means to access 3270 programs running on IBM mainframes.



TN3270 enables the NCT to function as though it were a 3279 mod 2, mod 3, mod 4, or mod 5 terminal. Unlike Telnet, TN3270 can manipulate the entire screen image, fields and function keys, in a way identical to a 3270 terminal. TN3270 provides the following standard features:

- **Window Menus** – The window menus offer simplicity and ease of use for all setup functions.
- **Color Display** – The color monitor is programmable in seven colors.
- **Switchable Screen Formats** – TN3270 supports four (4) screen sizes that can be selected from setup menus. The server to which the TN3270 client attaches must be configured to support the screen size used. Check with your system administrator.
- **Mono/DualCase Mode** – Allows characters to be displayed as all uppercase characters or as upper- and lowercase characters.
- **Mark Unprotected Field Indicator** – The 1480 CUT Emulator can be requested to mark unprotected fields with a special character.
- **Row/Column Indicator** – Displays the current cursor location on the operator status row.

- **Numeric Lock** – Allows a field to be defined to accept only numeric characters and the Period, Minus, and Dup keys. The comma may be substituted for the period on some international keyboards.
- **Multiple Sessions** – A maximum of 10 sessions can be accessed with this emulator.

Setting up a remote host as a 3270 terminal

To setup a remote host:

1. Click the **Start** button in the lower left-hand corner of the screen. The application menu will appear.
2. Click **TN3270**. The main TN3270 screen will appear with two menu options, **Setup** and **Session**.
3. Click **Setup**.
4. Click **Communications** from the Setup menu. This screen will appear:

The screenshot shows the 'TN3270 Communications Setup' dialog box. It has a title bar with the text 'TN3270 Communications Setup'. Inside, there's a 'Session Type' section with two radio buttons: 'Display' (which is selected) and 'Printer'. Below this is a 'Session Name' text field containing 'Session A'. To the right of the session name are 'Host' and 'Port' text fields. The 'Host' field is empty, and the 'Port' field contains '23'. Below these fields are several checkboxes: 'Enable TN3270E' (selected), 'Enable NSNA Cmd Chaining' (unchecked), 'Associate' (unchecked), 'Auto Connect' (unchecked), 'Enable SSL' (unchecked), and 'Verify SSL Server Name' (unchecked). At the bottom of the dialog are 'OK' and 'Cancel' buttons.

- **Session Type** – Select **Display** to configure a TN3270 Display session. Select **Printer** to configure a TN3287 Printer session.
- **Session Name** – Enter the name to be displayed in the window title.
- **Host** – Enter the Internet address of the TN3270 server to which you wish to connect, for example, 255.255.XXX.XXX.
- **Port** – If the host requires that a port number (other than port 23) be specified when connecting, select the port number using the up and down arrows or by typing the port in directly.
- **Enable TN3270E** – Select to enable TN3270E support.

- **LU Name** – Enter LU name string (optional, for TN3270E).
- **Auto Connect** – Select to auto connect at program start and to reconnect automatically if disconnected by the server.

Click **OK** to save changes and close Communications Setup, or **Cancel** to close and discard any changes.

Connecting to a TN3270 session

TN3270 will connect to the remote IBM mainframe host. The host then will normally respond with a welcome and will lead you through its log in process. Log in, employing one of the following combinations:

- With the userid and password supplied by the administrator of the host
- With just a userid (some hosts do not require passwords)
- Neither, if the remote host has been set up for it.

To connect to a TN3270 remote host from the main TN3270 screen:

1. Click **Session** to open the TN3270 Session menu.
2. Click **Connect**.

Once connected, use the menus, commands and features of the remote host to access and run 3270 applications.

Logging out of a remote host

1. When you have finished using the remote host, use the host's normal log out command.
2. To disconnect from the host, select **Disconnect** from the **Session** menu.

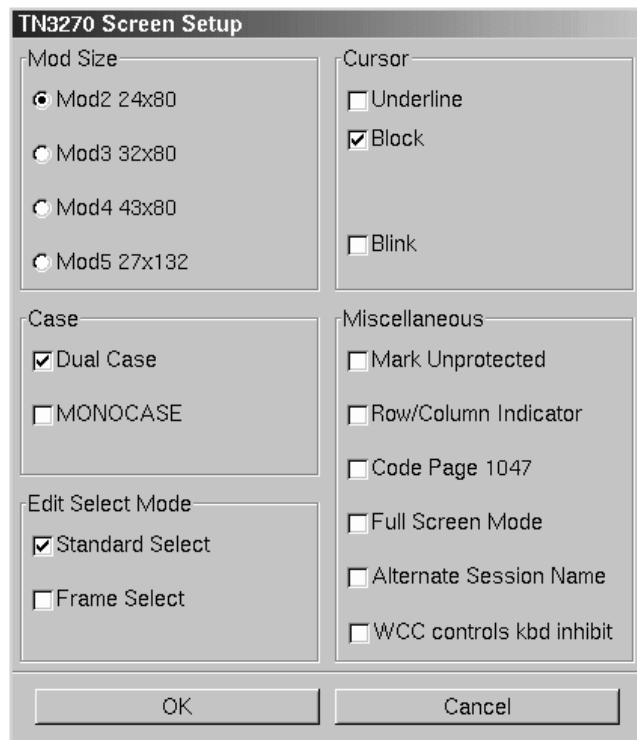
Configuring TN3270 for an application

TN3270 can be configured for a particular application by selecting **Screen**, **Keyboard** or **Color** from the Setup menu.

Screen setup

From the main TN3270 application screen:

1. Click **Setup** to open the TN3270 Setup menu.
2. Click **Screen**.



The image shows the 'TN3270 Screen Setup' dialog box. It has a title bar with the text 'TN3270 Screen Setup'. The dialog is divided into several sections. The 'Mod Size' section has four radio buttons: 'Mod2 24x80' (selected), 'Mod3 32x80', 'Mod4 43x80', and 'Mod5 27x132'. The 'Cursor' section has three checkboxes: 'Underline' (unchecked), 'Block' (checked), and 'Blink' (unchecked). The 'Case' section has two checkboxes: 'Dual Case' (checked) and 'MONOCASE' (unchecked). The 'Edit Select Mode' section has two checkboxes: 'Standard Select' (checked) and 'Frame Select' (unchecked). The 'Miscellaneous' section has five checkboxes: 'Mark Unprotected' (unchecked), 'Row/Column Indicator' (unchecked), 'Code Page 1047' (unchecked), 'Full Screen Mode' (unchecked), 'Alternate Session Name' (unchecked), and 'WCC controls kbd inhibit' (unchecked). At the bottom of the dialog are two buttons: 'OK' and 'Cancel'.

- **Mod Size** – Select the mod required by the design of the application program. Applications are designed to use one of the above mods, based on the number of rows per screen and characters per row, respectively. The default is Mod 2.
- **Case** – Select **DualCase** for upper and lower case characters. Select **MONOCASE** for all characters displayed as upper case letters.
- **Edit Select Mode** – Choose either **Standard Select** or **Frame Select**. **Standard select** performs an end-of-line wrap function when selecting text. **Frame Select** is used to a specific block of text without automatically performing an end-of-line wrap function.
- **Cursor** – Choose either an underline cursor or a block cursor. Select **Blink** for a blinking cursor.
- **Mark Unprotected** – Select to display a special symbol in each unprotected field on the screen. This enables you to recognize locations where keystrokes can be entered.
- **Row/Column Indicator** – Select to display the current cursor location on the operator status row. Note that the location is determined by the application program on the host system.

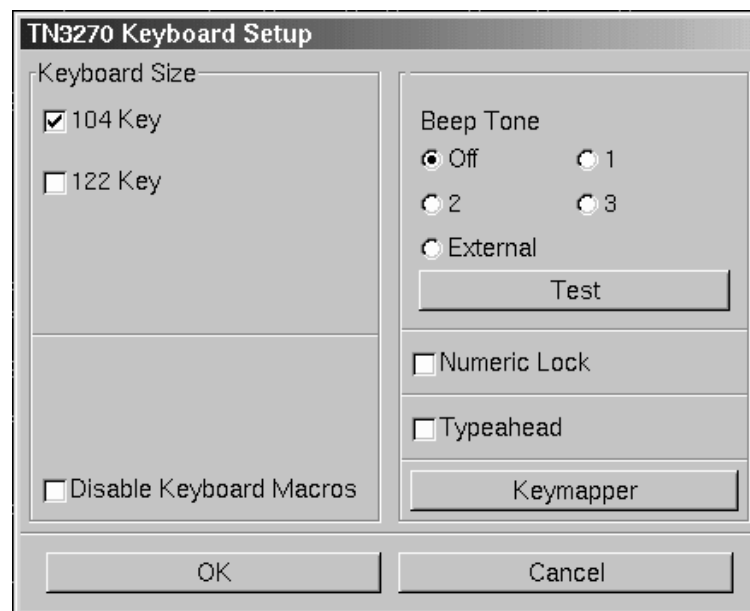
- **Code Page 1047** – Select to enable Code Page 1047
- **Full Screen Mode** – Select to open the TN3270 application in Full Screen Mode. TN3270 must be closed and reopened for this setting to become effective.
Note: To access the taskbar or minimized applications on the taskbar while Full Screen Mode is in effect, hold down the Ctrl and Alt keys while pressing the tab key. Press the tab key repeatedly until the name of the application you wish to bring to the front is displayed.
- **Alternate Session Name** – Select to display only the alternate session name in the titlebar.
- **WCC controls kbd inhibit** – If selected, keyboard inhibit will be controlled by data stream.

Click **OK** to save changes and close Screen Setup, or **Cancel** to close and discard any changes.

Keyboard setup

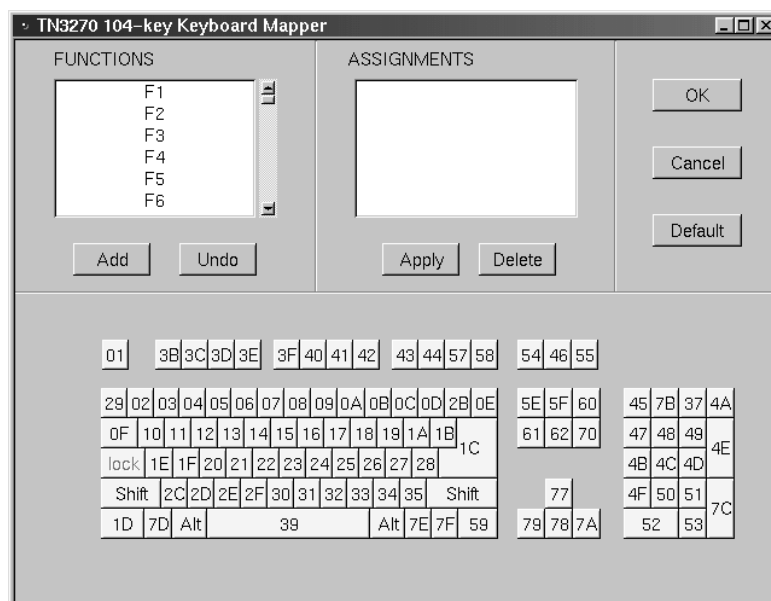
From the main TN3270 application screen:

1. Click **Setup** to open the TN3270 Setup menu.
2. Click **Keyboard**.



- **Keyboard Size** – Select either the 104 or 122-key keyboard.
- **Disable Keyboard Macros** – Prevents the user from assigning user-defined macro functions to keys.
- **Beep Tone** – Select the notification tone desired. Selecting **External** will require an external speaker to be connected to the unit.
- **Numeric lock** – If supported by the TN3270 server, will allow numeric keys only for numeric fields.
- **Typeahead** – Enable the Typeahead feature.
- **Key Mapper** – The key assignment (mapping) may be verified or changed as necessary for use in TN3270 applications.

Keyboard Mapper

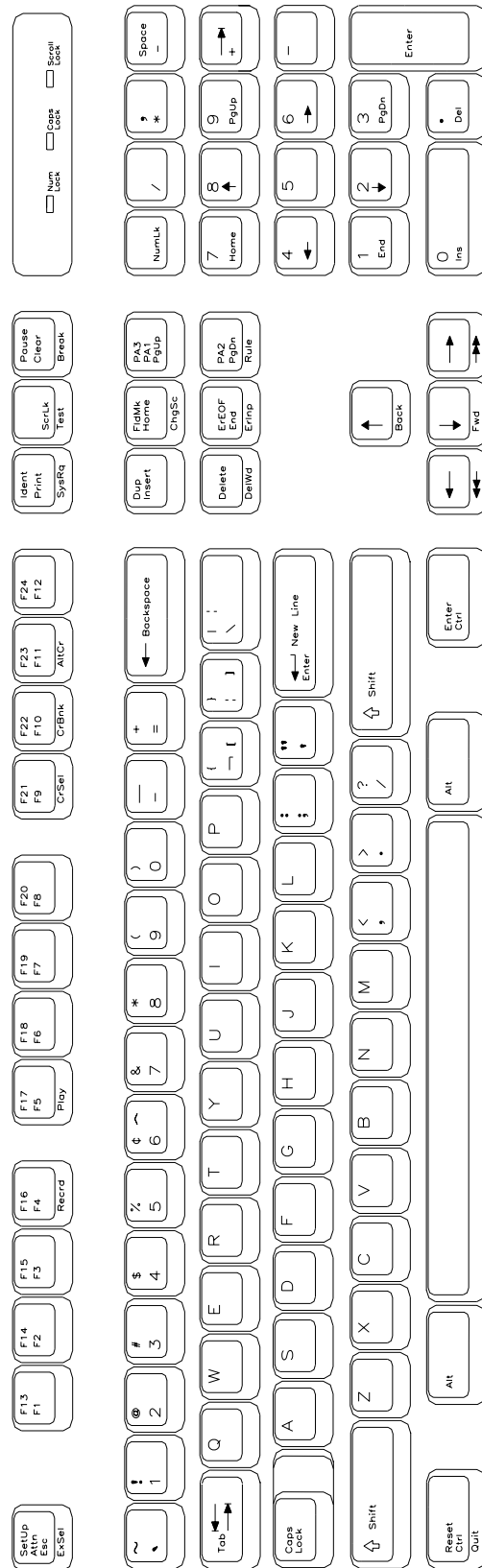


To determine which key is currently assigned to the key, click the appropriate key in the Functions box and the assigned value will be displayed in the Assignments box. Alternatively, on the keyboard layout, using the mouse click on the key to which the value needs to be displayed, the key will be displayed in the Functions box and the assigned value in the Assignments box.

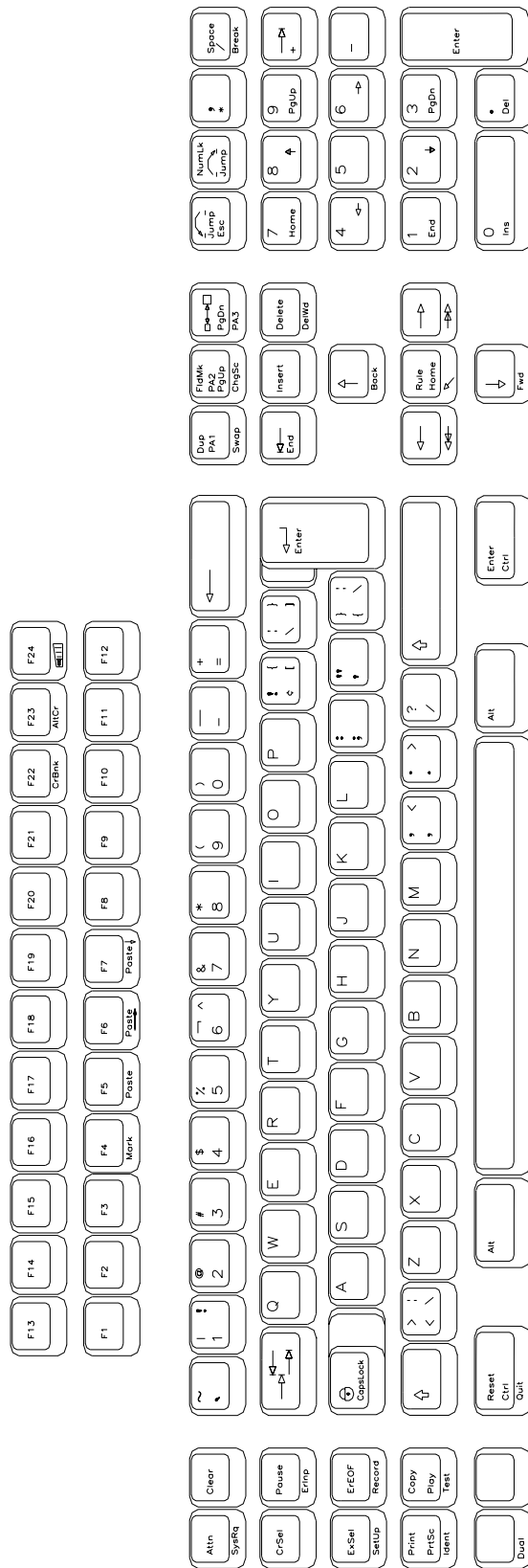
To change the key assignment:

1. Using the mouse, click on the key that needs to be changed on the keyboard layout or alternatively, choose the function from the Functions box.
2. Click **Add** below the Functions box.
3. Assign the new assignment required for the key selected. If a key combination is desired, click either the **Shift**, **Control**, or **Shift + Control** buttons.
4. Click **Apply** when satisfied with selection or click **Undo** to reassign.
Note: A function can be applied to multiple keys. Assigning a function to a key does not unassign it from a previous definition.
5. Click **OK** to save changes and Exit, or **Cancel** to discard changes and exit. To return the key assignments to their default state, click **Default**.

Note: TN3270 application must be closed and restarted for changes to become effective.



TN3270
104-key Keyboard Layout

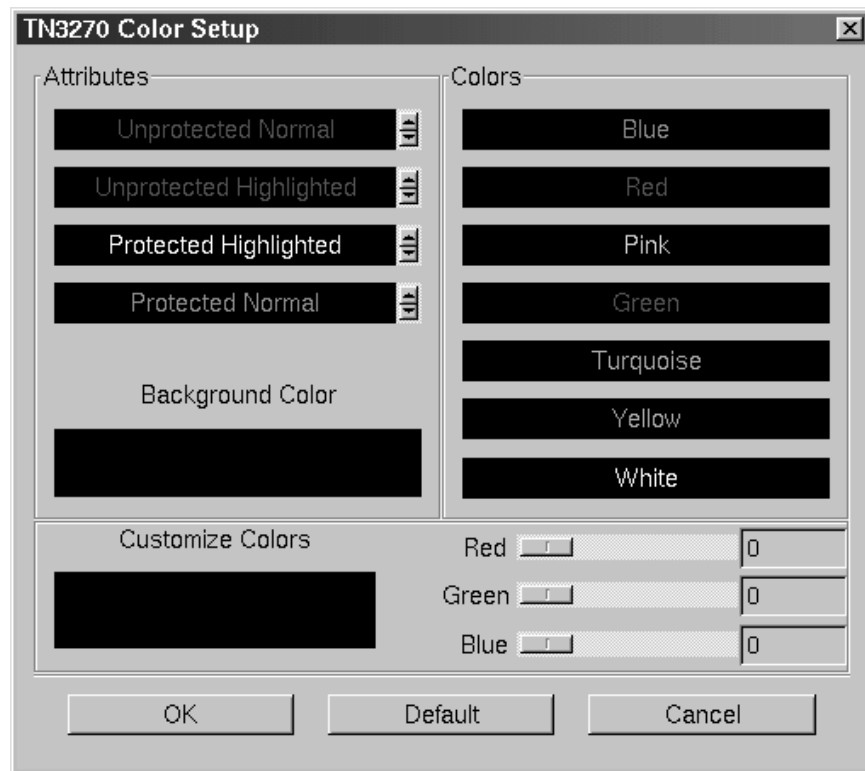


TN3270
122-key Keyboard Layout

Color Setup

From the main TN3270 application screen:

1. Click **Setup** to open the TN3270 Setup menu.
2. Click **Colors**.



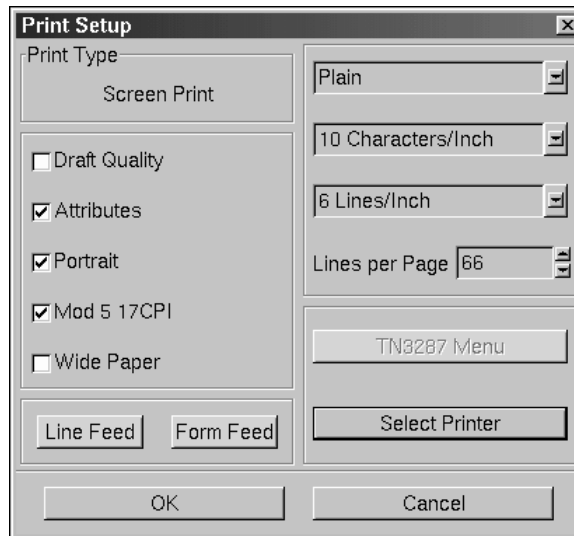
- **Attributes** – Use the arrows to select colors from the Colors list on the right. Select for protected, unprotected, normal and highlighted fields.
- **Customize Colors** – Select a color from the colors list. Use any or all of the three slider bars to adjust the selected color.
- **Background color** – Select the Background Color bar, then apply any or all of the three slider bars until the desired color shows in the Background Color box.

Click **OK** to save changes and close Color Setup, or **Cancel** to close and discard any changes.

Print setup

To access the Print Setup screen (shown below) from the main TN3270 screen:

1. Click **Setup** to open the TN3270 Setup menu.
2. Click **Printer**.



Print type

- **Screen print** – Prints the entire contents of the application window
- **Printer Type** – Specifies the printer driver to use when printing. Options are:
 - Plain
 - HP Laserjet
 - Epson Inkjet
 - Proprinter
 - Postscript

Note: Printing options found on this configuration panel may vary depending on the printer type selected.

- **Draft** – Prints draft quality when selected. Otherwise printing is letter quality.
- **Attributes** – If selected, prints intensified characters as bold and underlined when required.
- **Portrait** – If enabled, prints in Portrait mode. If disabled, prints in Landscape mode.
- **Mod 5 17 CPI** – If selected, printing automatically changes to 17 CPI (characters per inch) if the application screen is Mod 5.
- **Wide Paper** – If enabled, allows printing of more than 80 characters per line. This setting is generally used when Proprinter is selected as the Printer Type.
- **CPI Selection** – Specifies the number of Characters Per Inch to print. Options are 10, 10.5, 12, and 17 CPI.
- **LPI Selection** – Specifies the number of Lines Per Inch to print. Options are 3, 4, 6, 8, and 8.4 LPI.
- **Lines per page** – Specifies the number of Lines per Page to print. Selectable range is 0-255.

- **Line Feed** – Sends an immediate Line Feed to the selected printer.
- **Form Feed** – Sends an immediate Form Feed to the selected printer
- **Select Printer** – Displays the printer configuration menu.

Select Printer menu

To configure LPR, select the **Select Printer** button from within the TN3270 Printer Setup Screen. The LPR Setup panel is shown below:



The screenshot shows a 'Select Printer' dialog box. At the top is a title bar with the text 'Select Printer' and a close button (X). Below the title bar is a scrollable list box containing the text 'LPR1'. Below the list box are three labels with corresponding values: 'Local Name' with 'lp5', 'Remote Name' with 'lptest', and 'Remote Address' with '204.48.36.4'. At the bottom of the dialog are two buttons: 'OK' and 'Cancel'.

- **Scroll window** – Used to select a printer. A blue background indicates the printer is selected.
- **Local Name** – User-defined name of the printer.
- **Remote Name** – Queue name that print jobs are sent to from an LPR-enabled device.
- **Remote Address** – IP address of the selected printer.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Macro Record/Playback

The TN3270 macro function enables you to reduce the number of keystrokes required for a frequently repeated entry such as a logon sequence. Unique keystroke sequences can be stored for each of the 24 function keys on the keyboard. The entered keystroke sequences are stored in nonvolatile memory, which means that the data is retained even if the power is turned off.

Note: There is a 7000 key limit on the length of each macro.

Recording Macros

- Follow the steps below to store macros.
- 1. From the main TN3270 screen, click **Macro**.
 - 2. Click **Dialog**. The macro dialog screen will appear.

TN3270 Macro Control – Session A

Play	Record	Quit	Name		
Pause	Delay		Delete		

F1	F2	F3	F4	F5	F6
F7	F8	F9	F10	F11	F12
F13	F14	F15	F16	F17	F18
F19	F20	F21	F22	F23	F24

Close

- 3. Click **Record**. The color of the Record button will change to green, indicating that it is active.
- 4. Click the F# that you wish to record. That button will be highlighted, and **R F(#): (#) ks** will appear on the operator status row of the TN3270 screen. The **R** indicates Record, **F(#)** to show which F# was chosen for this macro and **(#) ks** to track how many keystrokes have been entered on this macro.
- 5. Type the keys to be associated with the macro.
- 6. Click the **Record** key again to save the macro and exit macro record mode. Press the **Quit** key to abandon the macro and exit record mode.

Note: F# buttons that have not been associated with a macro will appear grayed out on the macro dialog screen. To confirm that a key has not been used and to avoid inadvertently recording over an existing macro, check the status line after selecting the F# key. If there is no macro associated with this key, the number of keystrokes (ks) will be displayed as 0.

Naming Macros

In addition to associating an F# to a macro, a name or short description may also be saved with each macro. To store a macro name:

1. After recording the macro, click **Name**.
2. Click the **F#** key. The Function Namer dialog box will appear.
3. Enter a name for the macro.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Playing Macros

Follow the steps below to initiate macros:

1. Click the **Play** key within the dialog box, or select **Play** from the Macro pulldown menu.
2. Click the F# key associated with the macro you wish to recall.
3. The macro will automatically be recalled.
4. The macro will automatically terminate once all keys have been played. If you desire, the macro may be terminated at any point by pressing the **Quit** key. If the key pressed to exit macro play mode was anything other than Quit, there will be a beep to notify you of the (possibly unintentional) cancellation.

Pauses and Delays

There are certain key sequences, such as a logon password, that a user may wish to exclude from a macro. At any point while recording a macro key sequence, the **Pause** key may be clicked to temporarily suspend record mode. The keystrokes from this point forward will not be recorded within the macro until macro record mode is resumed by pressing the **Record** key. The **Quit** key will abandon the macro, even while macro record is paused.

If the **Pause** key is pressed while in macro record mode, besides suspending recording, it will be embedded within the macro and cause the macro to pause automatically each time it is played back.

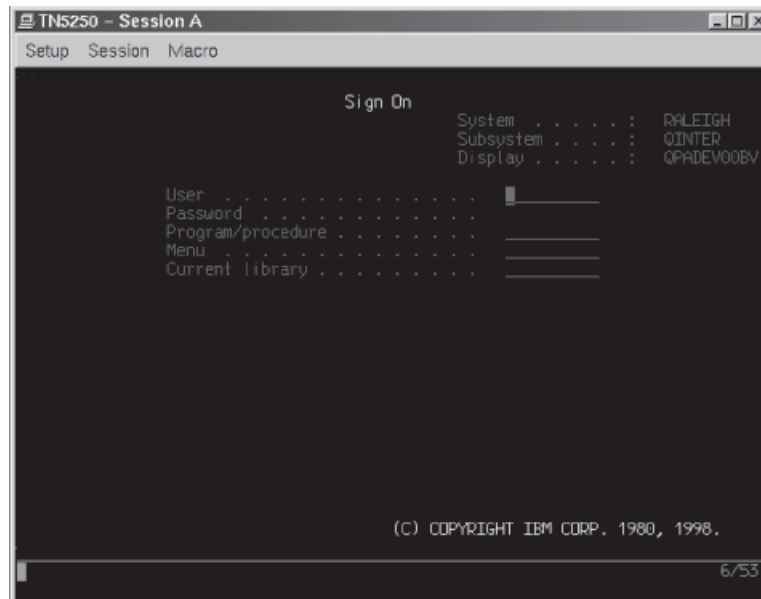
While playing back a macro the **Pause** key may be pressed to temporarily suspend the macro. At this point you may type in normal mode. Pressing the **Play** key will resume the macro. The **Quit** key will abandon the macro and return you to normal mode, even while macro play is paused.

If delays are desired within macros, the Delay key may be clicked while in record mode to embed an approximately one second delay within the macro. This may be clicked multiple times to extend the length of the delay.

TN5250

What is TN5250?

Like Telnet, TN5250 enables the user to access programs running on remote hosts. TN5250 provides the means to access 5250 programs running on IBM midframes.



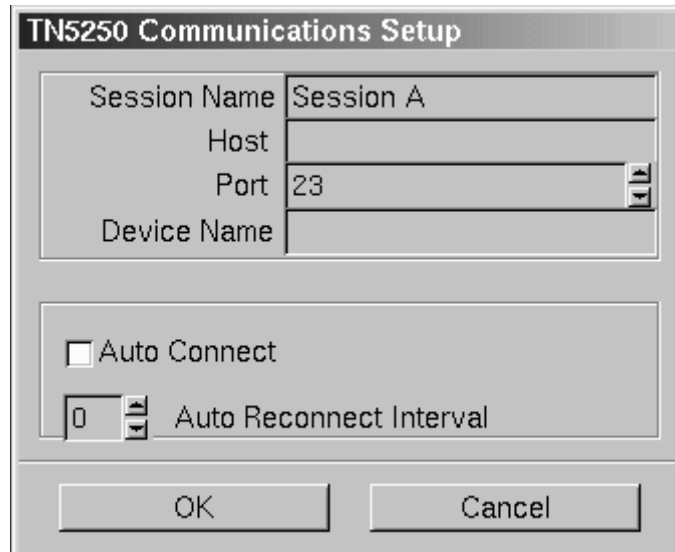
TN5250 can manipulate the entire screen image, fields and function keys, in a way identical to a 5250 terminal. TN5250 provides the following standard features:

- **Window Menus** – The window menus offer simplicity and ease of use for all setup functions.
- **Color Display** – The color monitor is programmable in seven colors.
- **Row/Column Indicator** – Displays the current cursor location on the operator status row.
- **Multiple Sessions** – A maximum of 10 sessions can be accessed with this emulator.

Setting up a remote host as a 5250 terminal

To setup a remote host:

1. Click the **Start** button in the lower left-hand corner of the screen. The application menu will appear.
2. Click **TN5250**. The main TN5250 screen will appear with two menu options, **Setup** and **Session**.
3. Click **Setup**.
4. Click **Communications** from the Setup menu. This screen will appear:



The image shows a dialog box titled "TN5250 Communications Setup". It contains several input fields and checkboxes. The "Session Name" field is filled with "Session A". The "Host" field is empty. The "Port" field is filled with "23" and has up and down arrow buttons to its right. The "Device Name" field is empty. Below these fields is a section with a checkbox labeled "Auto Connect" which is currently unchecked. Below the checkbox is a numeric input field containing "0" with up and down arrow buttons to its right, followed by the text "Auto Reconnect Interval". At the bottom of the dialog are two buttons: "OK" and "Cancel".

- **Session Name** – Enter the name to be displayed in the window title.
- **Host** – Enter the Internet address of the TN5250 server to which you wish to connect, for example, 255.255.XXX.XXX.
- **Port** – If the host requires that a port number (other than port 23) be specified when connecting, select the port number using the up and down arrows or by typing the port in directly.
- **Device Name** – Enter a name for the device or LU name.
- **Auto Connect** – Select to auto connect at program start and to reconnect automatically if disconnected by the server. Select an interval time for how often a reconnection attempt will be made if disconnected.

Click **OK** to save changes and close Communications Setup, or **Cancel** to close and discard any changes.

Connecting to a TN5250 session

TN5250 will connect to the remote host. The host then will normally respond with a welcome and will lead you through its log in process. Log in, employing one of the following combinations:

- With the userid and password supplied by the administrator of the host
- With just a userid (some hosts do not require passwords)
- Neither, if the remote host has been set up for it.

To connect to a TN5250 remote host from the main TN5250 screen:

1. Click **Session** to open the TN5250 Session menu.
2. Click **Connect**.

Once connected, use the menus, commands and features of the remote host to access and run 5250 applications.

Logging out of a remote host

1. When you have finished using the remote host, use the host's normal log out command.
2. To disconnect from the host, select **Disconnect** from the **Session** menu.

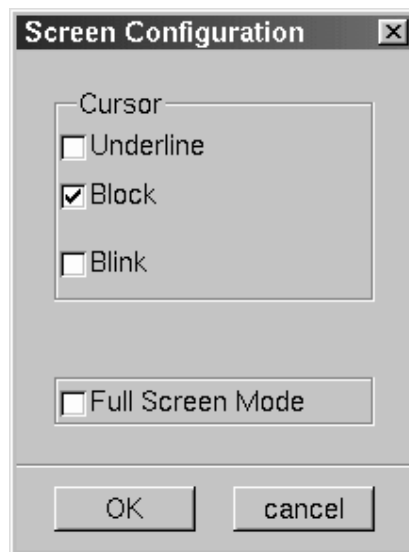
Configuring TN5250 for an application

TN5250 can be configured for a particular application by selecting **Screen**, **Keyboard** or **Color** from the Setup menu.

Screen setup

From the main TN5250 application screen:

1. Click **Setup** to open the TN5250 Setup menu.
2. Click **Screen**.



- **Cursor** – Choose either an underline cursor or a block cursor. Select **Blink** for a blinking cursor.
- **Full Screen Mode** – Select to open the TN5250 application in Full Screen Mode. TN5250 must be closed and reopened for this setting to become effective.

Note: To access the taskbar or minimized applications on the taskbar while Full Screen Mode is in effect, hold down the Ctrl and Alt keys while pressing the tab key. Press the tab key repeatedly until the name of the application you wish to bring to the front is displayed.

Click **OK** to save changes and close Screen Setup, or **Cancel** to close and ignore any changes.

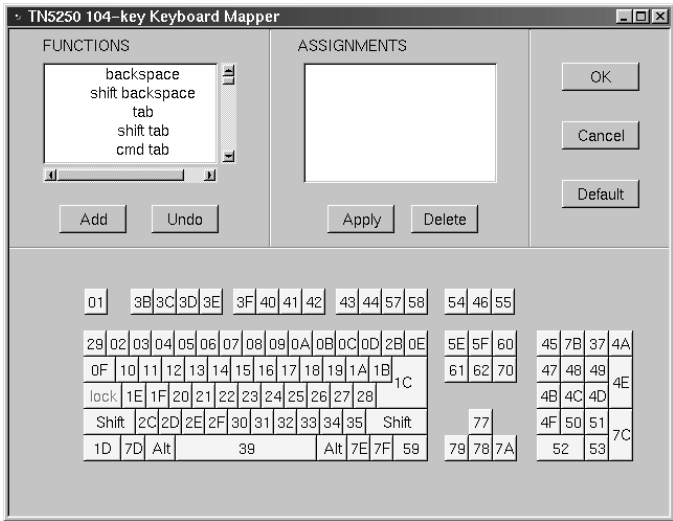
Keyboard setup

- From the main TN5250 application screen:
1. Click **Setup** to open the TN5250 Setup menu.
 2. Click **Keyboard**.

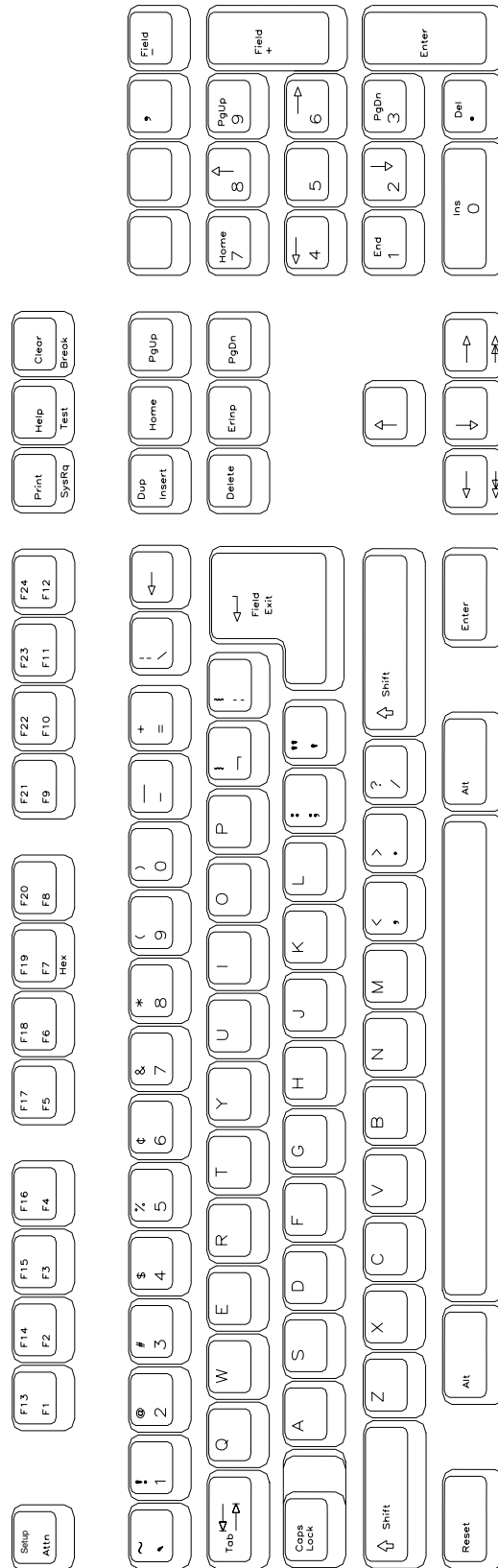


- **Keyboard Size** – Select either 104 or 122-key keyboard.
- **Typeahead** – Enable the Typeahead feature.
- **Keyboard Mapper** – The key assignment (mapping) may be verified or changed as necessary for use in TN5250 applications.

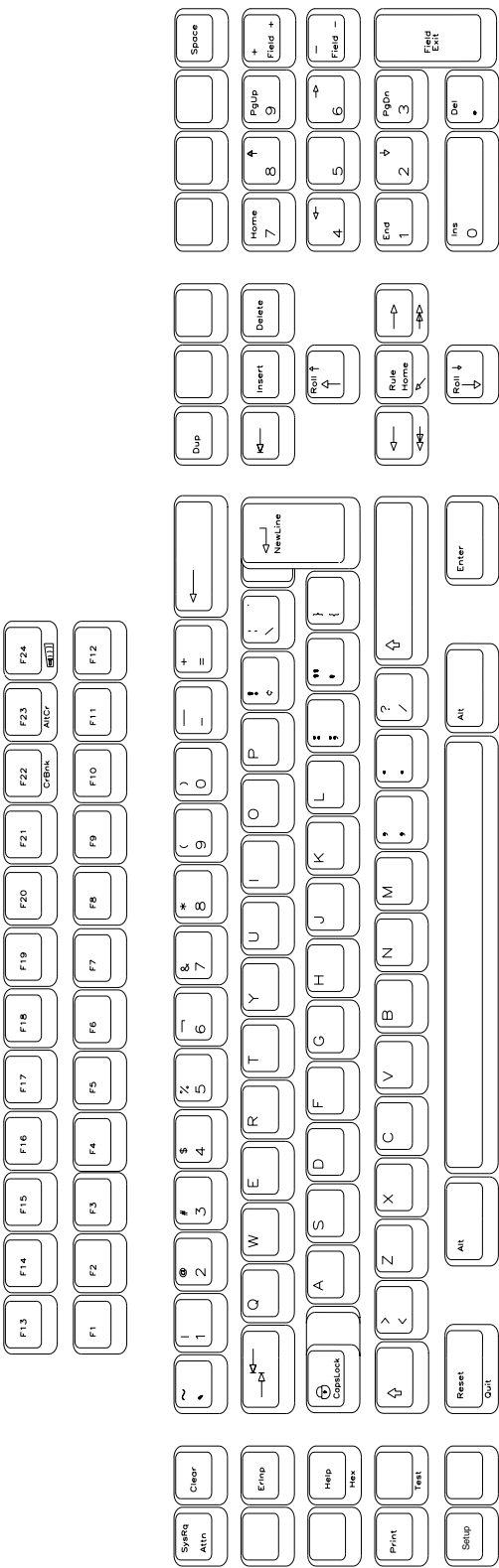
Keyboard Mapper



To determine which key is currently assigned to the key, click the appropriate key in the Functions box and the assigned value will be displayed in the Assignments box.



TN5250
104-key Keyboard Layout



TN5250
122-key Keyboard Layout

Alternatively, on the keyboard layout, using the mouse click on the key to which the value needs to be displayed, the key will be displayed in the Functions box and the assigned value in the Assignments box.

To change the key assignment:

1. Using the mouse, click on the key that needs to be changed on the keyboard layout or alternatively, choose the function from the Functions box.
2. Click **Add** below the Functions box.
3. Assign the new assignment required for the key selected. If a key combination is desired, click either the **Shift**, **Control**, or **Shift + Control** buttons.
4. Click **Apply** when satisfied with selection or click **Undo** to reassign.

Note: A function can be applied to multiple keys. Assigning a function to a key does not unassign it from a previous definition.

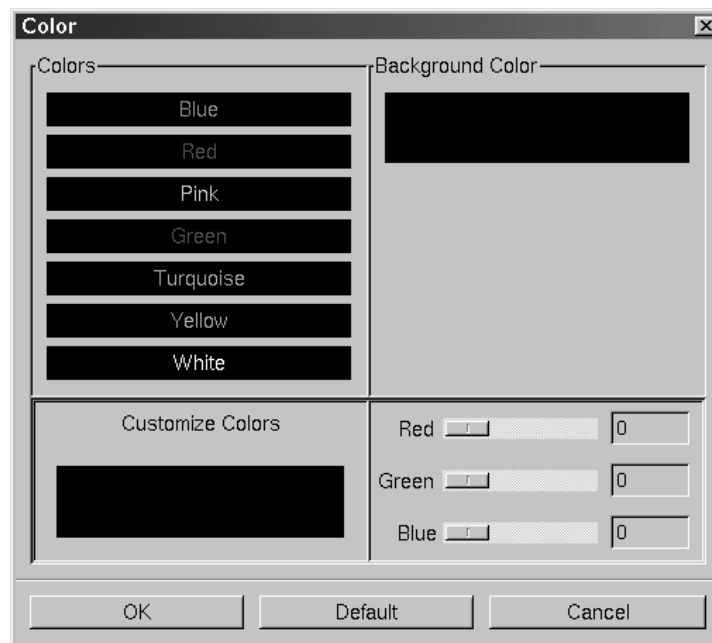
5. Click **OK** to save changes and Exit, or **Cancel** to discard changes and exit. To return the key assignments to their default state, click **Default**.

Note: TN5250 application must be closed and restarted for changes to become effective.

Color Setup

From the main TN5250 application screen:

1. Click **Setup** to open the TN5250 Setup screen.
2. Click **Colors**.



3. Select a color from the Colors list or Background Color. Use any or all of the three slider bars to adjust the selected color.

Click **OK** to save changes and close Color Setup, or **Cancel** to close and discard any changes.

Print setup

To access the Print Setup screen from the main TN5250 screen:

1. Click **Setup** to open the TN5250 Setup menu.
2. Click **Printer**.

Print Setup

Print Type

Screen Print

☐ Draft Quality

☒ Attributes

☒ Portrait

☒ Mod 5 17CPI

☐ Wide Paper

Line Feed Form Feed

Printer Type

Plain

10 Characters/Inch

6 Lines/Inch

Lines per Page 66

Programmable Setup String

Select Printer

OK Cancel

Print type

- **Screen print** – Prints the entire contents of the application window
- **Printer Type** – Specifies the printer driver to use when printing. Options are:
 - Plain
 - HP Laserjet
 - Epson Inkjet
 - Proprinter
 - Postscript

Note: Printing options found on this configuration panel may vary depending on the printer type selected.

- **Draft** – Prints draft quality when selected. Otherwise printing is letter quality.
- **Attributes** – If selected, prints intensified characters as bold and underlined when required.
- **Portrait** – If enabled, prints in Portrait mode. If disabled, prints in Landscape mode.
- **Mod 5 17 CPI** – If selected, printing automatically changes to 17 CPI (characters per inch) if the application screen is Mod 5.
- **Wide Paper** – If enabled, allows printing of more than 80 characters per line. This setting is generally used when Proprinter is selected as the Printer Type.
- **CPI Selection** – Specifies the number of Characters Per Inch to print. Options are 10, 10.5, 12, and 17 CPI.
- **LPI Selection** – Specifies the number of Lines Per Inch to print. Options are 3, 4, 6, 8, and 8.4 LPI.

- **Lines per page** – Specifies the number of Lines per Page to print. Selectable range is 0-255.
- **Line Feed** – Sends an immediate Line Feed to the selected printer.
- **Form Feed** – Sends an immediate Form Feed to the selected printer
- **Select Printer** – Displays the printer configuration menu.

PSSP

Programmable Setup String for Printer menu provides a mechanism for the user to send a 16 byte string to the selected printer (locally attached or lpr). This could be used to select an alternate font or paper source - the capabilities are printer dependent and usually detailed in your printer manual.

PSSP

Programmable Setup String for Printer

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09	0x0a	0x0b	0x0c	0x0d	0x0e	0x0f	0x10

Select the desired byte and use the control to the right to adjust its value

Decimal: 1 Hex: 0x01

Clear Recall

Send Setup String

☒ On first print only
☐ On each print

Send Now

OK Cancel

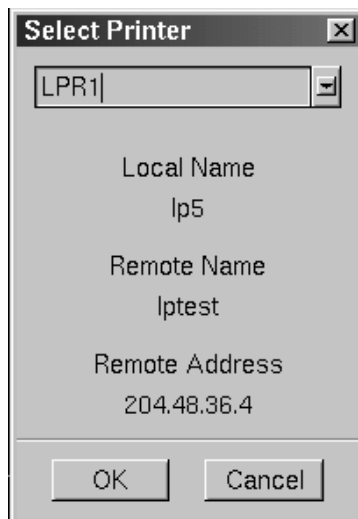
On entry to the menu the currently stored string is displayed, one byte per cell. The 8-bit values in each cell can be altered either by directly keying a new hexadecimal value into the cell or using the scroll buttons provided.

- **Clear** – Set all values to 0.
- **Recall** – Redisplay the currently stored values.
- **On first print only** – The string is sent only on the first print since the current TN5250 session was started.
- **On each print** – The string will precede each print sent from the TN5250 session.
- **Send Now** – Sends the string immediately.

Click **OK** to save changes and exit, or **Cancel** to discard any changes and exit.

Select Printer menu

To configure LPR, select the **Select Printer** button from within the TN5250 Printer Setup Screen. The LPR Setup panel is shown below:



- **LPR scroll window** – Used to select a printer. A blue background indicates the printer is selected.
- **Local Name** – User-defined name of the printer.
- **Remote Name** – Queue name that print jobs are sent to from an LPR-enabled device.
- **Remote Address** – IP address of the selected printer.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Macro Record/Playback

The TN5250 macro function enables you to reduce the number of keystrokes required for a frequently repeated entry such as a logon sequence. Unique keystroke sequences can be stored for each of the 24 function keys on the keyboard. The entered keystroke sequences are stored in nonvolatile memory, which means that the data is retained even if the power is turned off.

Note: There is a 7000 key limit on the length of each macro.

Recording Macros

Follow the steps below to store macros.

1. From the main TN5250 screen, click **Macro**.

2. Click **Dialog**. The macro dialog screen will appear.

TN3270 Macro Control – Session A					
Play	Record	Quit		Name	
Pause	Delay			Delete	
F1	F2	F3	F4	F5	F6
F7	F8	F9	F10	F11	F12
F13	F14	F15	F16	F17	F18
F19	F20	F21	F22	F23	F24
Close					

3. Click **Record**. The color of the Record button will change to green, indicating that it is active.
4. Click the F# that you wish to record. That button will be highlighted, and **R F(#): (#) ks** will appear on the operator status row of the TN5250 screen. The **R** indicates Record, **F(#)** to show which F# was chosen for this macro and **(#) ks** to track how many keystrokes have been entered on this macro.
5. Type the keys to be associated with the macro.
6. Click the **Record** key again to save the macro and exit macro record mode. Press the **Quit** key to abandon the macro and exit record mode.
Note: F# buttons that have not been associated with a macro will appear grayed out on the macro dialog screen. To confirm that a key has not been used and to avoid inadvertently recording over an existing macro, check the status line after selecting the F# key. If there is no macro associated with this key, the number of keystrokes (ks) will be displayed as 0.

Naming Macros

In addition to associating an F# to a macro, a name or short description may also be saved with each macro. To store a macro name:

1. After recording the macro, click **Name**.
2. Click the **F#** key. The Function Namer dialog box will appear.
3. Enter a name for the macro.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Playing Macros

Follow the steps below to initiate macros:

1. Click the **Play** key within the dialog box, or select **Play** from the Macro pulldown menu.
2. Click the F# key associated with the macro you wish to recall.
3. The macro will automatically be recalled.

4. The macro will automatically terminate once all keys have been played. If you desire, the macro may be terminated at any point by pressing the **Quit** key. If the key pressed to exit macro play mode was anything other than Quit, there will be a beep to notify you of the (possibly unintentional) cancellation.

Pauses and Delays

There are certain key sequences, such as a logon password, that a user may wish to exclude from a macro. At any point while recording a macro key sequence, the **Pause** key may be clicked to temporarily suspend record mode. The keystrokes from this point forward will not be recorded within the macro until macro record mode is resumed by pressing the **Record** key. The **Quit** key will abandon the macro, even while macro record is paused.

If the **Pause** key is pressed while in macro record mode, besides suspending recording, it will be embedded within the macro and cause the macro to pause automatically each time it is played back.

While playing back a macro the **Pause** key may be pressed to temporarily suspend the macro. At this point you may type in normal mode. Pressing the **Play** key will resume the macro. The **Quit** key will abandon the macro and return you to normal mode, even while macro play is paused.

If delays are desired within macros, the Delay key may be clicked while in record mode to embed an approximately one second delay within the macro. This may be clicked multiple times to extend the length of the delay.

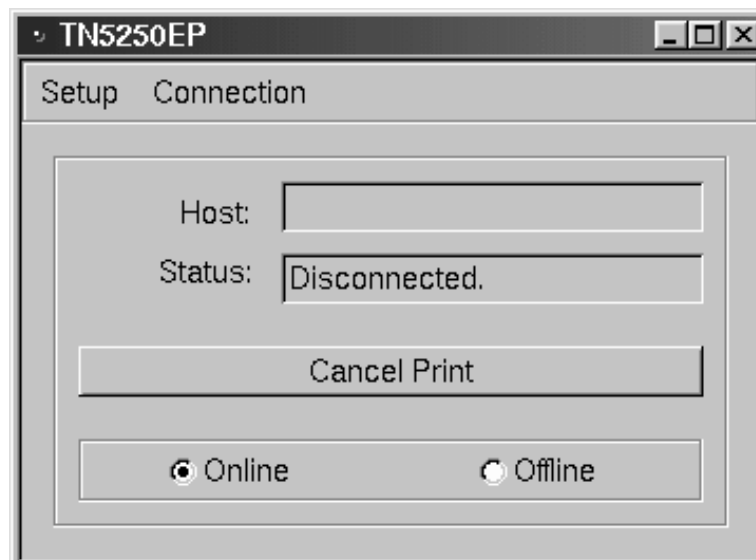
TN5250EP

The TN5250EP Printer application in the NCT supports two types of printing on the AS/400:

- **HPT** – Host Print Transform (HPT) is an OS/400 function that converts an AS/400 spool file into an ASCII printer data stream. The actual conversion of the spool file takes place on the AS/400 using printer drivers provided by IBM.
- **ASCII Pass Thru** – This function allows an application to embed ASCII control characters within a normal EBCDIC spool file. Processing of the spool file takes place on the NCT.

Note: Only PCL5 printers are supported when using this function on the NCT.

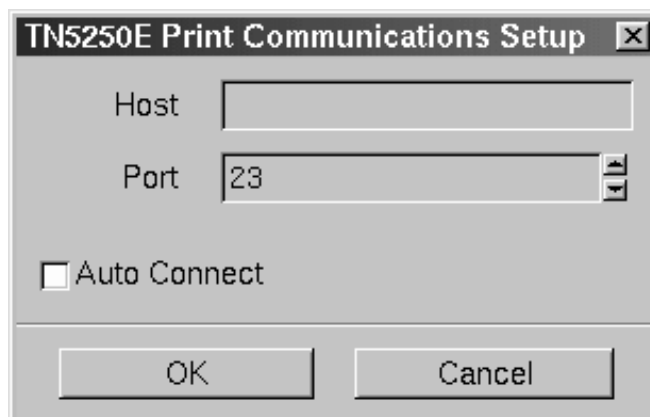
This is the window displayed for a TN5250EP session. It provides some information and control of the session.



- **Host** – Displays the IP address or DNS (Domain Name Service) name of the AS/400 with which a printer session is to be established.
- **Status** – Indicates the status of the connection of the printer session to the AS/400. Status examples are: **Connection established; Session successfully started; Ready for print data; Processing print data; Disconnected.**
- **Cancel Print** – Clicking on this button while the NCT is receiving an AS/400 print job, stops printing after a "Cancel Print" message is sent to the AS/400. Depending on the size of the buffer memory in the printer, printing may continue until the printer's buffer is empty.
- **Online/Offline** – These checkboxes simulate the Online/Offline button on a printer.

Setup

Communications



- **Host** – Enter the IP address or DNS (Domain Name Service) name of the AS/400 with which a printer session is to be established.
- **Port** – Specifies the host port that the Telnet session should use. The default is 23.
- **Auto Connect** – Enabling this checkbox will establish a printer session with the AS/400 when the TN5250EP application is run from the Visara Start menu.

Printer



- **Scroll window** – Used to select a printer. A blue background indicates the printer is selected.
- **Local Name** – User-defined name of the printer.
- **Remote Name** – Queue name that print jobs are sent to from an LPR-enabled device.
- **Remote Address** – IP address of the selected printer.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Environment

The screenshot shows a dialog box titled "TN5250E Printer Session Environment". It contains several sections with input fields and dropdown menus:

- Device Name:** A single-line text input field.
- Message Queue:** A section containing "Name:" and "Library:" text input fields.
- Font:** A text input field.
- Form Feed:** A dropdown menu.
- Host Transform Parameters:** A section containing four dropdown menus: "Host Transform:", "Type & Model:", "ASCII 899:", "Paper Source 1:", "Paper Source 2:", and "Envelope:".
- Workstation Customizing Object:** A section containing "Name:" and "Library:" text input fields.
- Buttons:** "OK" and "Cancel" buttons at the bottom.

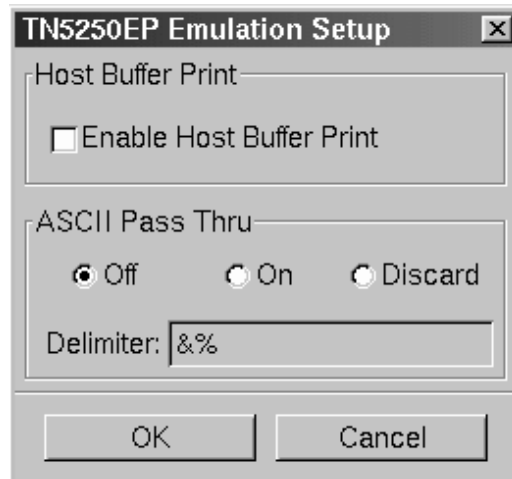
Once the settings are entered correctly in this window, the TN5250E printing will be automatically configured on the AS/400 system. OS/400 versions prior to V4R3 may require certain PTFs.

Check with IBM to determine what AS/400 PTFs you may require to support TN5250E printing. Some fields are required as defined below:

- **Device Name** – This field entry is not required. The name is arbitrary but must be unique. The name will usually be supplied by the System Administrator.
- **Message Queue** – Not required. This field will identify the message queue where operational messages are sent.
- **Font** – This field entry is required. The default value is 11.
- **Form Feed** – Not required. Identifies the type of forms used.
- **Host Transform** – This field entry is required. The default value is *YES. If the AS/400 application is to create ASCII Pass Thru data (SCS mode), then select *NO.
- **Type and Model** – This field is required. This field identifies the attached printer type. If your printer type is not listed use a printer type with a compatible printer command set. The other fields are not required.
Note: If the Host Transform parameter is set to *NO, then this field does NOT apply.
- **ASCII 899** – Not required. If the attached printer supports ASCII code page 899 (used for OfficeVision/400 symbols), then select *YES.

- **Workstation Customizing Object** – Not required. Allows customization of the printer command stream.

Emulation



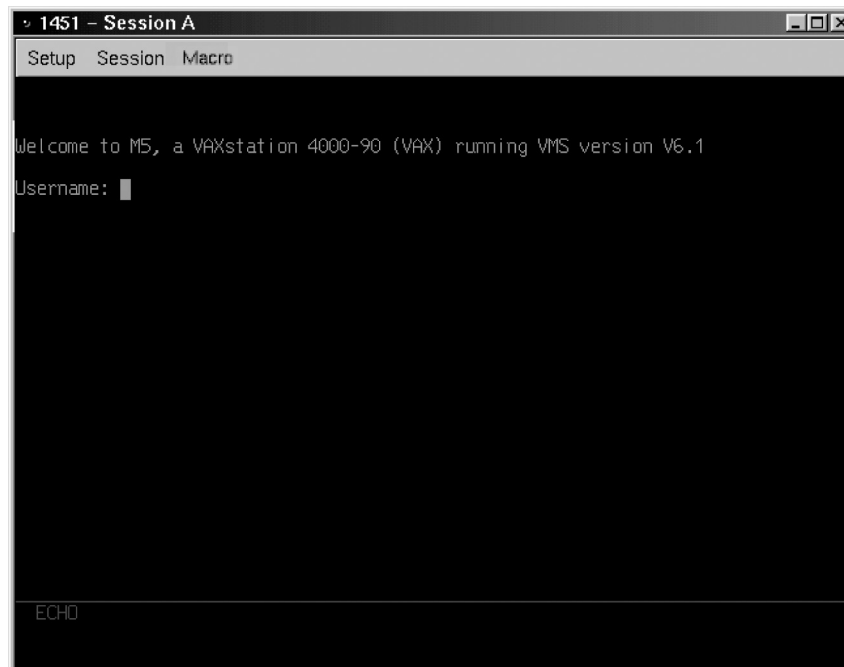
- **Enable Host Buffer Print** – Enabling this checkbox will output a formatted printout with hex codes on the left column and the translated characters on the right column.
- **ASCII Pass Thru** – This feature will enable the AS/400 application to activate specific printer functions. During normal print mode, the NCT converts the SCS data stream from the AS/400 into ASCII printer control codes and printable characters. When the NCT detects the Pass Thru delimiter characters, it stops converting the SCS data stream and starts “passing thru” the embedded printer control codes to the printer. This continues until the Pass Thru delimiter characters are detected.
Note: This feature will only be enabled if the Host Transform entry is set to *NO in the NCT Environment setup screen.
 - **Off** – Turn off ASCII Pass Thru. Do not check data stream for delimiters.
 - **On** – Turn on ASCII Pass Thru (APT). Check data stream for delimiters and discard them, interpret APT characters and pass them to the printer.
 - **Discard** – Check data stream for delimiters and discard them, interpret APT characters and discard them. Used for troubleshooting.

- **Delimiter** – Enter two EBCDIC characters that will be used to Start/Stop ASCII Pass Thru.

1451

What is 1451?

Like Telnet, 1451 enables you to access programs running on remote hosts.



1451 enables the NCT to function as though it were a standard 3151 display. 1451 provides the following standard features:

- **Window Menus** – The window menus offer simplicity and ease of use for all setup functions.

- **Color Display** – The color monitor is programmable.
- **Multiple Sessions** – A maximum of 10 sessions can be accessed with this emulator.

Setting up 1451

1. Click the **Start** button located in the lower left corner of the screen.
2. Select **Program** from the pop-up menu.
3. Select **Emulators** from the next pop-up menu.
4. Click on the **1451** entry.
5. Select **Communications** from the Setup menu.

V1451 Communications Setup

Connection Type
☒ LAN ☐ Serial

Session Name
Location

LAN
Host
Port

☐ Auto Connect
Auto Login
☐ Auto Play Macro # F
Break Key

860
Initial State Feature
Scan On
Wrap On
Follows Scan

Serial
Host

Line Turnaround Character
Comm Mode
Disconnect
Send
Send Null Suppress
Bell (0x07)
Alt Bell Time

- **Connection Type** – Select either a LAN or Serial connection. (Serial port not available on 300.)
- **LAN**
 - **Host** – Enter the Internet address of the 1451 server to which you wish to connect, for example, 255.255.XXX.XXX.
 - **Port** – If the host requires that a port number (other than port 23) be specified when connecting, select the port number using the up and down arrows or by typing the port in directly.
- **Auto Connect** – Select to auto connect at program start-up.
- **Auto Login** – Select to enable and configure auto login on connect.
- **Auto Play Macro** – Select the F# associated with the macro that should play upon connection. The name of the macro (if previously named) will appear in the window below the checkbox.
- **Break Key** – Selects command sent for BreakKey function when using LAN

connection.

- **Initial State**
 - **Scan On/Off/Once** – Allows selection of how serial input data is handled when emulator is started.
- **Feature On/Off** – Used to control serial port (com 3) usage with an alternate data input device. (Serial bar code scanner, MICR scanner, Mag Stripe reader) (Serial port not available on 300.)
- **Session Name** – Enter the name to be displayed in the window title.
- **Line Turnaround Character** – Allows selection of either ETX(0x03), EOT(0x04), CR(0x0D), or DC3(0x13) as line turn around characters.
- **Comm Mode** – Will allow selection of Character Mode, Echo Mode or Local.
- **Disconnect** – Selects either 60mSec or 2 sec.
- **Send** – Effects function of Send Key...either Current Line or Current Page.
- **Send Null Suppress** – Selection On or Off...Controls suppression of transmission of trailing null characters online.
- **Bell (0x07)** – Select Internal/External/Alt 1/Alt 2 for alarm.
- **Serial** (Serial port not available on 300.)
 - **Host** – Enter a new host name or select from the drop-down list.
 - **Configure** – Select to display the Serial Communications Configuration Panel. Enter the Baud rate, parity, data bits and stop bits for the serial connection.

Click **OK** to save changes and close Communications Setup, or **Cancel** to close and discard any changes.

Connecting to a 1451 session

1451 will connect to the remote host. The host then will normally respond with a welcome and will lead you through its log in process. Log in, employing one of the following combinations:

- With the userid and password supplied by the administrator of the host
- With just a userid (some hosts do not require passwords)
- Neither, if the remote host has been set up for it.

To connect to a 1451 remote host from the main 1451 screen:

1. Click **Session** to open the 1451 Session menu.
2. Click **Connect**.

Once connected, use the menus, commands and features of the remote host to access and run 1451 applications.

Logging out of a remote host

1. When you have finished using the remote host, use the host's normal log out command.
2. To disconnect from the host, select **Disconnect** from the **Session** menu.

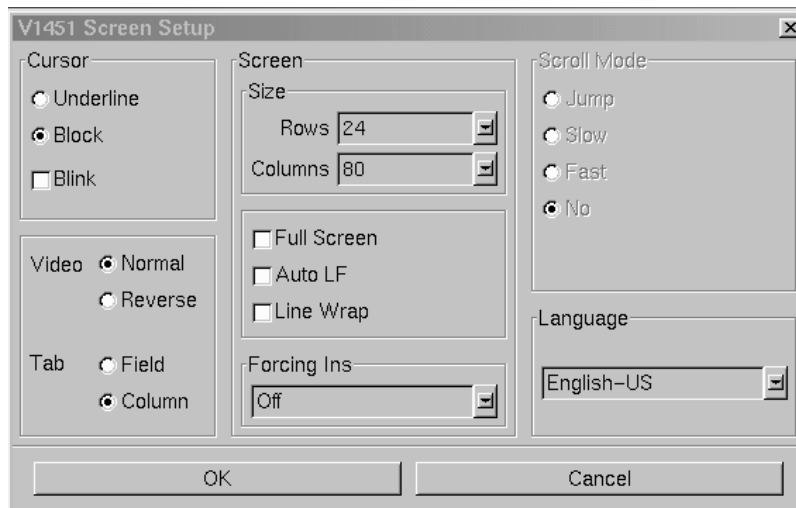
Configuring 1451 for an application

1451 can be configured for a particular application by selecting **Screen**, **Keyboard** or **Color** from the Setup menu.

Screen setup

From the main 1451 application screen:

1. Click **Setup** to open the 1451 Setup menu.



2. Click **Screen**.
 - **Cursor** – Choose either an underline cursor or a block cursor. Select **Blink** for a blinking cursor.
 - **Full Screen Mode** – Select to open the 1451 application in Full Screen Mode. 1451 must be closed and reopened for this setting to become effective.
Note: To access the taskbar or minimized applications on the taskbar while Full Screen Mode is in effect, hold down the Ctrl and Alt keys while pressing the tab key. Press the tab key repeatedly until the name of the application you wish to bring to the front is displayed.
 - **Forcing Insert** – Allows selection from the following:
 - **Off** – Doesn't allow a character or line insert if there's no room.
 - **Character** – Will delete the last character in the line or field to make room for a character.
 - **Line** – Will delete the last line on screen or up to next field to insert a blank line.
 - **Both** – Will delete last character or line to allow insert of character or blank line.

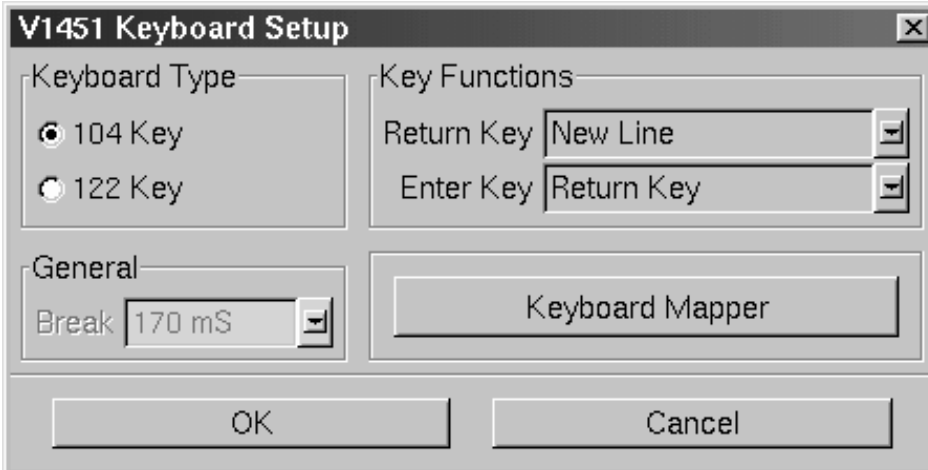
- **Language** – Allows selection of either English-US or Portuguese.

Click **OK** to save changes and close Screen Setup, or **Cancel** to close and discard any changes.

Keyboard setup

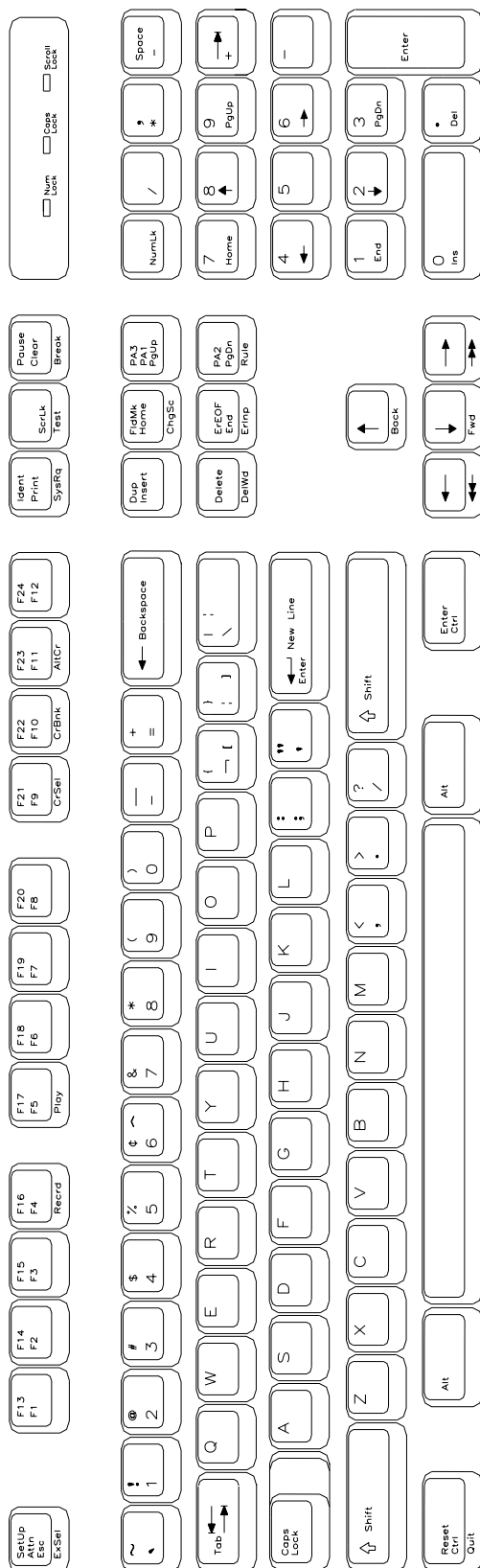
From the main 1451 application screen:

1. Click **Setup** to open the 1451 Setup menu.
2. Click **Keyboard**.

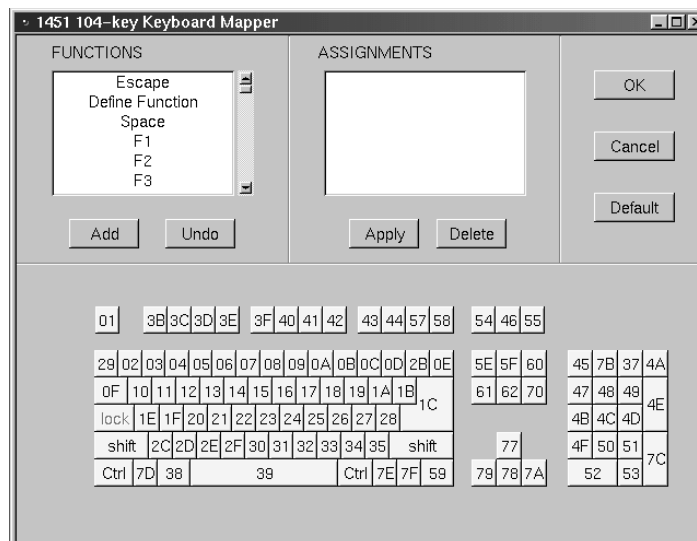


The image shows a dialog box titled "V1451 Keyboard Setup". It has a close button (X) in the top right corner. The dialog is divided into several sections. On the left, under "Keyboard Type", there are two radio buttons: "104 Key" (which is selected) and "122 Key". Below this is a "General" section with a "Break" field set to "170 mS" and a dropdown arrow. On the right, under "Key Functions", there are two rows: "Return Key" set to "New Line" and "Enter Key" set to "Return Key", each with a dropdown arrow. Below these is a "Keyboard Mapper" button. At the bottom of the dialog are "OK" and "Cancel" buttons.

- **Keyboard Type** – Select either 104 or 122-key keyboard.
- **Return Key** – Defines function of return key (above right shift) to equal New Line or Field
- **Enter Key** – Defines numeric pad enter key to equal Return Key or Send Key
- **Key Mapper** – The key assignment (mapping) may be verified or changed as necessary for use in TN3270 applications.



Keyboard Mapper



To determine which key is currently assigned to the key, click the appropriate key in the Functions box and the assigned value will be displayed in the Assignments box. Alternatively, on the keyboard layout, using the mouse click on the key to which the value needs to be displayed, the key will be displayed in the Functions box and the assigned value in the Assignments box.

To change the key assignment:

1. Using the mouse, click on the key that needs to be changed on the keyboard layout or alternatively, choose the function from the Functions box.
2. Click **Add** below the Functions box.
3. Assign the new assignment required for the key selected. If a key combination is desired, click either the **Shift**, **Control**, or **Shift + Control** buttons.
4. Click **Apply** when satisfied with selection or click **Undo** to reassign.

Note: A function can be applied to multiple keys. Assigning a function to a key does not unassign it from a previous definition.

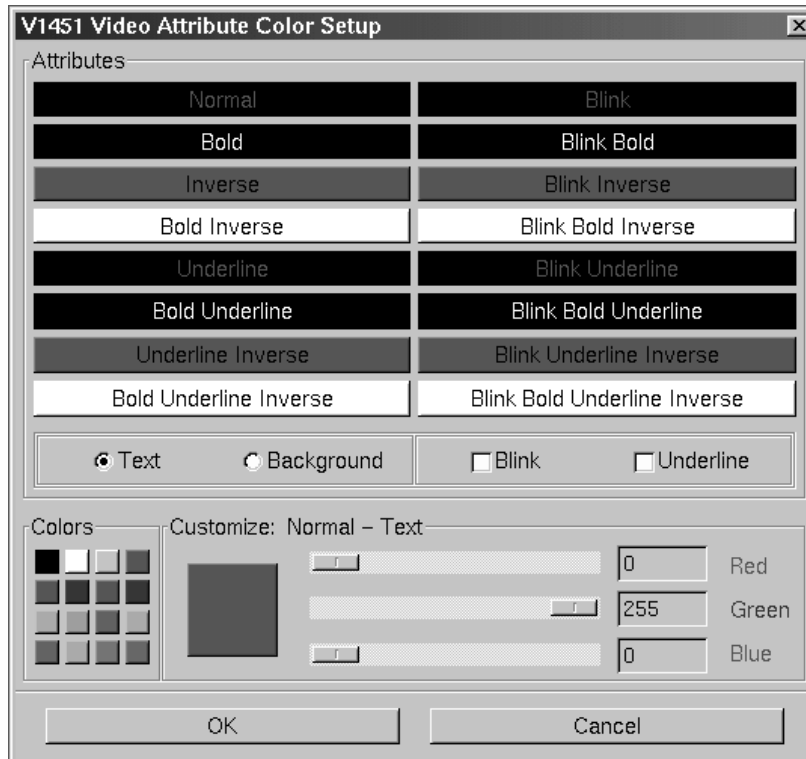
5. Click **OK** to save changes and Exit, or **Cancel** to discard changes and exit. To return the key assignments to their default state, click **Default**.

Note: 1451 application must be closed and restarted for changes to become effective.

Color setup

From the main 1451 application screen:

1. Click **Setup** to open the 1451 Setup screen.
2. Click **Colors**.



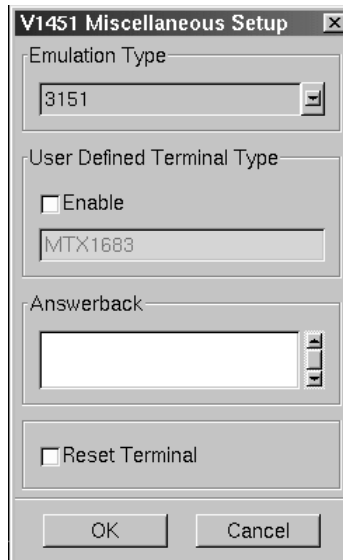
To change the text or background color in 1451 applications:

1. Click either the **Text** or **Background** button.
2. Click the Attribute to be changed. The current color will appear in the Customize box.
3. Change the color by clicking one of the 16 color blocks, or customize the color by using the sliders. The colors in the attribute block will change accordingly.
4. Click **Blink** and/or **Underline** to apply to the selected attribute.
5. Click **OK** to save changes and exit, or **Cancel** to discard changes and exit.

Miscellaneous setup

From the main 1451 application screen:

1. Click **Setup**.
2. Click **Miscellaneous**. The 1451 Miscellaneous Setup screen is shown below:



The screenshot shows a dialog box titled "V1451 Miscellaneous Setup". It contains the following fields and controls:

- Emulation Type:** A text box containing "3151" with a dropdown arrow on the right.
- User Defined Terminal Type:** A section containing a checkbox labeled "Enable" (which is unchecked) and a text box containing "MTX1683".
- Answerback:** A text box that is currently empty, with a dropdown arrow on the right.
- Reset Terminal:** A checkbox labeled "Reset Terminal" (which is unchecked).
- Buttons:** "OK" and "Cancel" buttons at the bottom.

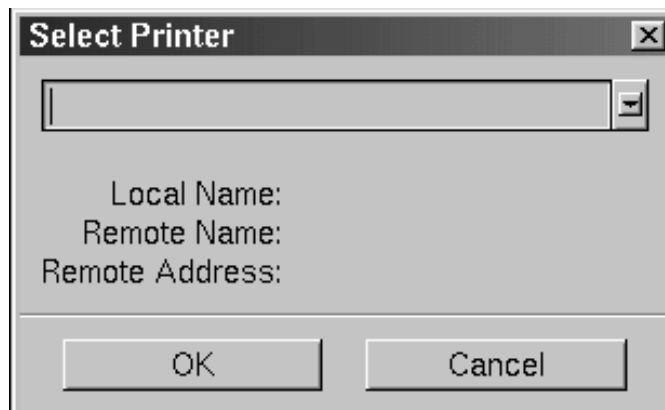
- **Emulation Type** – Displays emulation type to be used (only 3151 currently supported).
 - **User Defined Terminal Type** – Terminal type string sent to the host.
 - **ANSWERBACK** – Enter the Answerback string.
 - **RESET Terminal** – Select to reset the Emulator.
3. Click **OK** to save changes and exit, or **Cancel** to discard changes and exit.

Printer setup

From the main 1451 application screen:

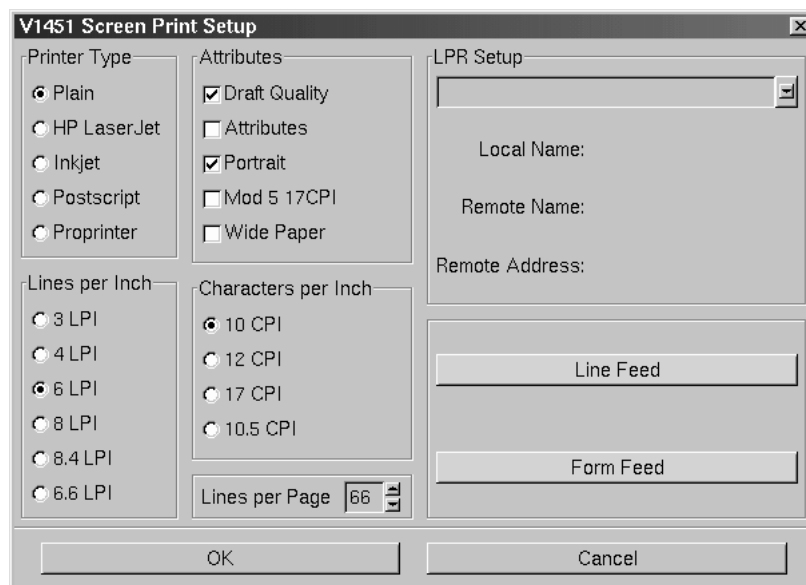
1. Click **Setup**.
2. Click **Printer**.
3. Select **Host Print** or **Screen Print**.

Host Print



Select the appropriate printer from the list of configured LPR printers.

Screen Print



- **Printer Type** – Specifies the printer driver to use when printing.
- **Lines per Inch** – Specifies the number of Lines Per Inch to print.
- **Characters per Inch** – Specifies the number of Characters Per Inch to print.
- **Lines per page** – Specifies the number of Lines per Page to print. Selectable range is 0-255.
- **Draft Quality** – Prints draft quality when selected. Otherwise printing is letter quality.
- **Attributes** – If selected, prints intensified characters as bold and underlined when required.

- **Portrait** – If enabled, prints in Portrait mode. If disabled, prints in Landscape mode.
- **Mod 5 17 CPI** – If selected, printing automatically changes to 17 CPI (characters per inch) if the application screen is Mod 5.
- **Wide Paper** – If enabled, allows printing of more than 80 characters per line. This setting is generally used when Proprinter is selected as the Printer Type.
- **LPR Setup**
 - **LPR Printer Window** – Select the defined printer that will receive 1451 print jobs. Once selected, the Local Name, Remote Name, and Remote Address will be displayed below the LPR Printer Window.
- **Line Feed** – Sends an immediate Line Feed to the selected printer.
- **Form Feed** – Sends an immediate Form Feed to the selected printer

About

From the main 1451 screen:

1. Click **Setup**.
2. Click **About**.

A dialogue box will appear displaying the version of the 1451 installed and the copyright notice.

Macro Record/Playback

The 1451 macro function enables you to reduce the number of keystrokes required for a frequently repeated entry such as a logon sequence. Unique keystroke sequences can be stored for each of the 24 function keys on the keyboard. The entered keystroke sequences are stored in nonvolatile memory, which means that the data is retained even if the power is turned off.

Note: There is a 7000 key limit on the length of each macro.

Recording Macros

Follow the steps below to store macros.

1. From the main 1451 screen, click **Macro**.
2. Click **Dialog**. The macro dialog screen will appear.

TN3270 Macro Control - Session A						
Play	Record	Quit		Name		
Pause	Delay			Delete		
F1	F2	F3	F4	F5	F6	
F7	F8	F9	F10	F11	F12	
F13	F14	F15	F16	F17	F18	
F19	F20	F21	F22	F23	F24	
Close						

3. Click **Record**. The color of the Record button will change to green, indicating that it is active.
4. Click the F# that you wish to record. That button will be highlighted, and **R F(#): (#) ks** will appear on the operator status row of the 1451 screen. The **R** indicates Record, **F(#)** to show which F# was chosen for this macro and **(#) ks** to track how many keystrokes have been entered on this macro.
5. Type the keys to be associated with the macro.
6. Click the **Record** key again to save the macro and exit macro record mode. Press the **Quit** key to abandon the macro and exit record mode.

Note: F# buttons that have not been associated with a macro will appear grayed out on the macro dialog screen. To confirm that a key has not been used and to avoid inadvertently recording over an existing macro, check the status line after selecting the F# key. If there is no macro associated with this key, the number of keystrokes (ks) will be displayed as 0.

Naming Macros

In addition to associating an F# to a macro, a name or short description may also be saved with each macro. To store a macro name:

1. After recording the macro, click **Name**.
2. Click the **F#** key. The Function Namer dialog box will appear.
3. Enter a name for the macro.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Playing Macros

Follow the steps below to initiate macros:

1. Click the **Play** key within the dialog box, or select **Play** from the Macro pulldown menu.
2. Click the F# key associated with the macro you wish to recall.
3. The macro will automatically be recalled.
4. The macro will automatically terminate once all keys have been played. If you desire, the macro may be terminated at any point by pressing the **Quit** key. If the key pressed to exit macro play mode was anything other than Quit, there will be a beep to notify you of the (possibly unintentional) cancellation.

Pauses and Delays

There are certain key sequences, such as a logon password, that a user may wish to exclude from a macro. At any point while recording a macro key sequence, the **Pause** key may be clicked to temporarily suspend record mode. The keystrokes from this point forward will not be recorded within the macro until macro record mode is resumed by pressing the **Record** key. The **Quit** key will abandon the macro, even while macro record is paused.

If the **Pause** key is pressed while in macro record mode, besides suspending recording, it will be embedded within the macro and cause the macro to pause automatically each time it is played back.

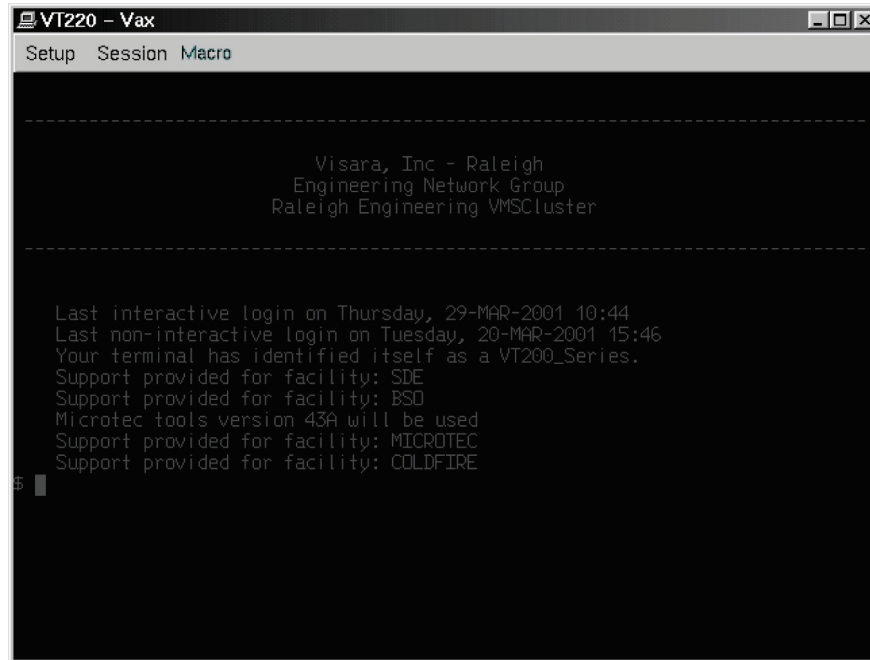
While playing back a macro the **Pause** key may be pressed to temporarily suspend the macro. At this point you may type in normal mode. Pressing the **Play** key will resume the macro. The **Quit** key will abandon the macro and return you to normal mode, even while macro play is paused.

If delays are desired within macros, the Delay key may be clicked while in record mode to embed an approximately one second delay within the macro. This may be clicked multiple times to extend the length of the delay.

VT220

What is VT220?

Like Telnet, VT220 enables you to access programs running on remote hosts.



VT220 enables the NCT to function as though it were a standard VT220 display. VT220 provides the following standard features:

- **Window Menus** – The window menus offer simplicity and ease of use for all setup functions.
- **Color Display** – The color monitor is programmable.
- **Multiple Sessions** – A maximum of 10 sessions can be accessed with this emulator.

Setting up VT220

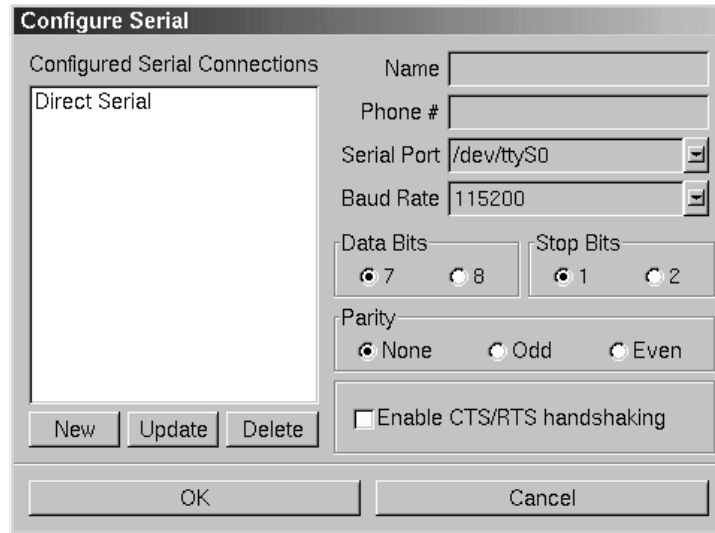
To setup a remote host:

1. Click the **Start** button in the lower left-hand corner of the screen. The application menu will appear.
2. Click **VT220**.
3. Click **Setup**.
4. Click **Communications** from the Setup menu. This screen will appear:

The screenshot shows the 'VT220 Communications Setup' dialog box. It has two main sections: 'LAN' and 'Serial'. The 'LAN' section is active, showing fields for 'Host' and 'Port' (set to 0). There are checkboxes for 'Auto Connect', 'Auto Login', and 'Auto Play Macro # F' (set to 1). Below these are two rows of settings for the '860' scanner: 'Initial State' (Scan On) and 'Feature' (Off). The 'Serial' section is inactive, showing a 'Host' field and a 'Configure' button. At the bottom are 'OK' and 'Cancel' buttons.

- **Connection Type** – Select either a LAN or Serial connection. (Serial port not available on 300.)
- **LAN**
 - **Host** – Enter the Internet address of the VT220 server to which you wish to connect, for example, 255.255.XXX.XXX.
 - **Port** – If the host requires that a port number (other than port 23) be specified when connecting, select the port number using the up and down arrows or by typing the port in directly.
- **Auto Connect** – Select to auto connect at program start-up.
- **Auto Login** – Select to enable and configure auto login on connect.
- **Auto Play Macro** – Select the F# associated with the macro that should play upon connection. The name of the macro (if previously named) will appear in the window below the checkbox.
- **860** – Set initial state and feature of barcode scanner.
- **Session Name** – Enter the name to be displayed in the window title.
- **Serial** (Serial port not available on 300.)

- **Host** – Enter the Internet address of the VT220 server to which you wish to connect, for example, 255.255.XXX.XXX.
- **Configure** – Select to display the Serial Communications Configuration Panel. Enter the Baud rate, parity, data bits and stop bits for the serial connection.



The 'Configure Serial' dialog box is shown. It has a title bar 'Configure Serial'. On the left, under 'Configured Serial Connections', there is a list box containing 'Direct Serial'. Below this list are three buttons: 'New', 'Update', and 'Delete'. On the right side, there are several input fields and radio buttons: 'Name' (text box), 'Phone #' (text box), 'Serial Port' (dropdown menu showing '/dev/ttyS0'), 'Baud Rate' (dropdown menu showing '115200'), 'Data Bits' (radio buttons for 7 and 8, with 8 selected), 'Stop Bits' (radio buttons for 1 and 2, with 1 selected), 'Parity' (radio buttons for None, Odd, and Even, with None selected), and a checkbox for 'Enable CTS/RTS handshaking' which is currently unchecked. At the bottom are 'OK' and 'Cancel' buttons.

Click **OK** to save changes and close Communications Setup, or **Cancel** to close and discard any changes.

Connecting to a VT220 session

VT220 will connect to the remote host. The host then will normally respond with a welcome and will lead you through its log in process. Log in, employing one of the following combinations:

- With the userid and password supplied by the administrator of the host
- With just a userid (some hosts do not require passwords)
- Neither, if the remote host has been set up for it.

To connect to a VT220 remote host from the main VT220 screen:

1. Click **Session** to open the VT220 Session menu.
2. Click **Connect**.

Once connected, use the menus, commands and features of the remote host to access and run VT220 applications.

Logging out of a remote host

1. When you have finished using the remote host, use the host's normal log out command.
2. To disconnect from the host, select **Disconnect** from the **Session** menu.

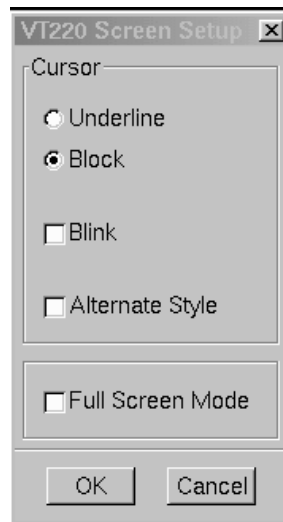
Configuring VT220 for an application

VT220 can be configured for a particular application by selecting **Screen**, **Keyboard** or **Color** from the Setup menu.

Screen setup

From the main VT220 application screen:

1. Click **Setup** to open the VT220 Setup menu.
2. Click **Screen**.



- **Cursor** – Choose either an underline cursor or a block cursor.
- **Blink** – Select for a blinking cursor.
- **Alternate Style** – If reverse video is being used, selecting this will make the cursor displayable.
- **Full Screen Mode** – Select to open the VT220 application in Full Screen Mode. VT220 must be closed and reopened for this setting to become effective.

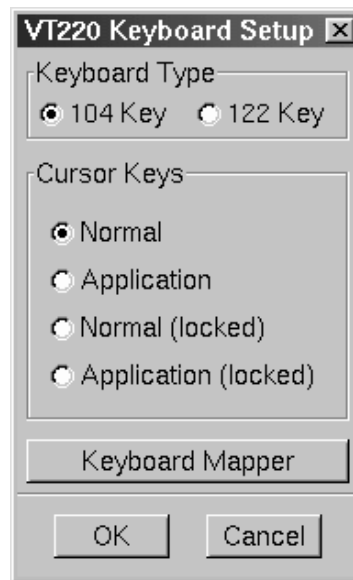
Note: To access the taskbar or minimized applications on the taskbar while Full Screen Mode is in effect, hold down the Ctrl and Alt keys while pressing the tab key. Press the tab key repeatedly until the name of the application you wish to bring to the front is displayed.

Click **OK** to save changes and close Screen Setup, or **Cancel** to close and discard any changes.

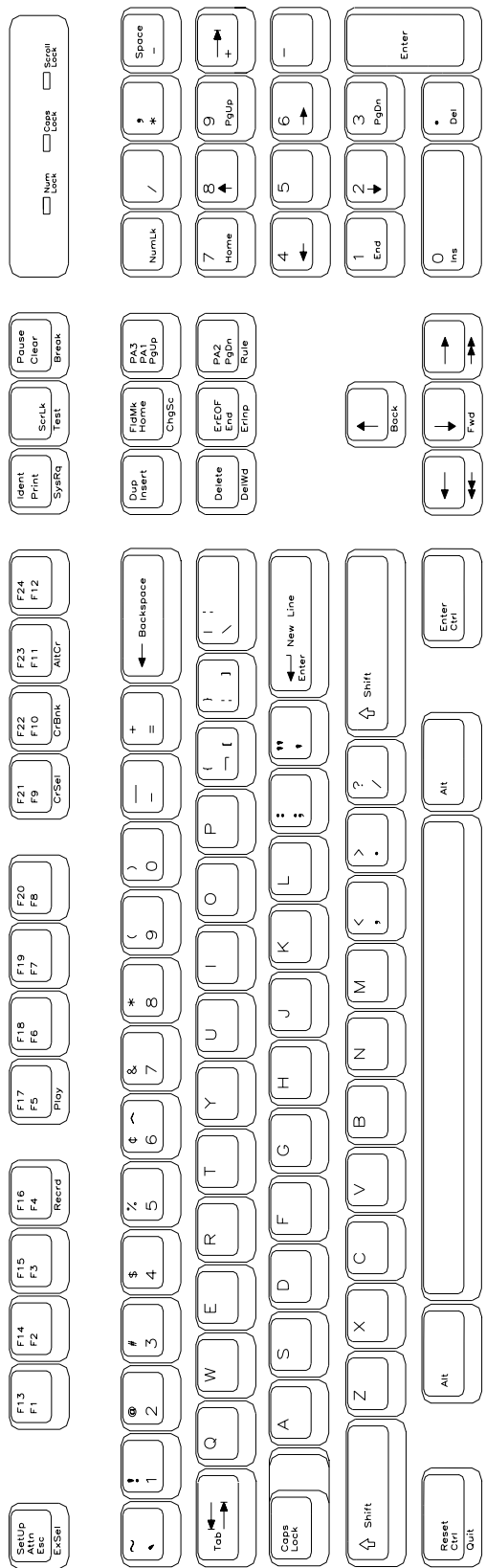
Keyboard setup

From the main VT220 application screen:

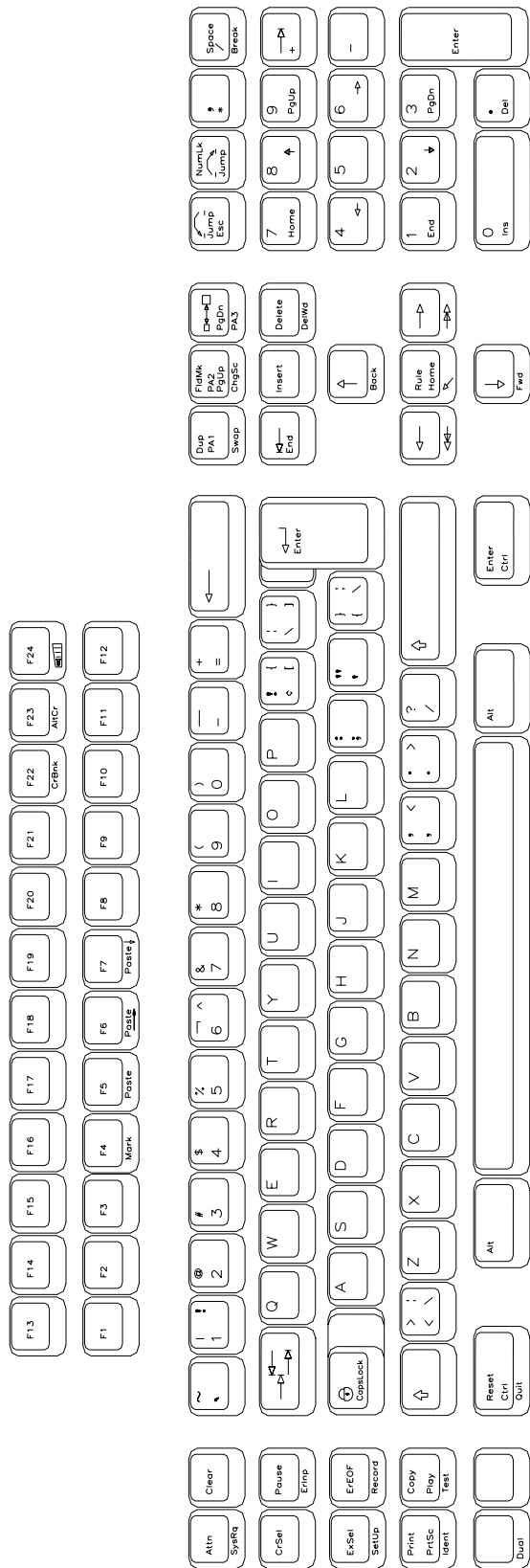
1. Click **Setup** to open the VT220 Setup menu.
2. Click **Keyboard**.



- **Keyboard Type** – Select either 104 or 122-key keyboard.
- **Cursor Keys**
 - **Normal** – Use normal cursor key escape sequences.
 - **Application** – Uses application cursor key escape sequences. The keypad generates application control sequences.
 - **Normal (locked)** – Uses normal cursor key escape sequences. The application cannot override the defined value.
 - **Application (locked)** – Uses application cursor key escape sequences. The application may not override the defined value.

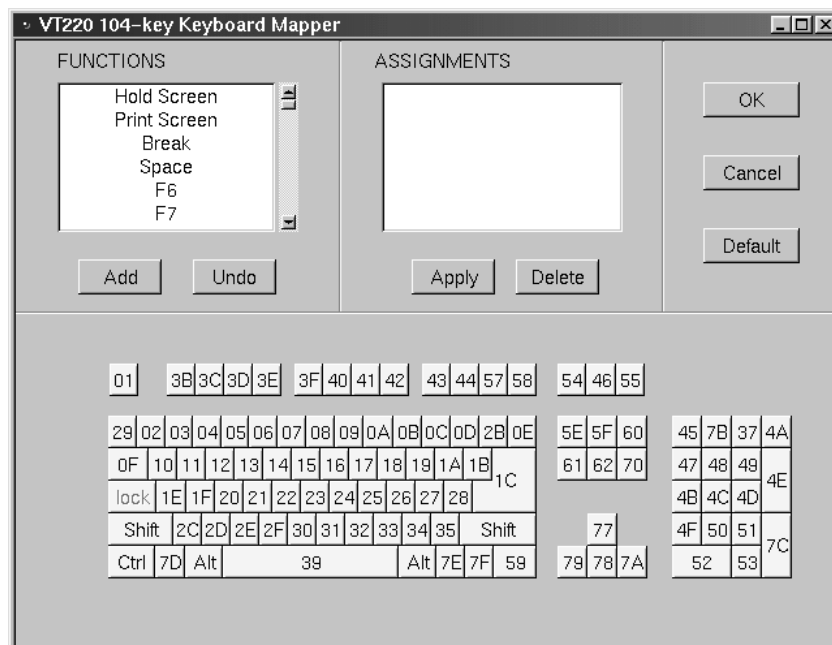


VT220
104-key Keyboard Layout



VT220
122-key Keyboard Layout

- **Keyboard Mapper** – The key assignment (mapping) may be verified or changed as necessary for use in VT220 applications.



To determine which key is currently assigned to the VT key, click the appropriate VT key in the Functions box and the assigned value will be displayed in the Assignments box. Alternatively, on the keyboard layout, using the mouse click on the key to which the value needs to be displayed, the key will be displayed in the Functions box and the assigned value in the Assignments box.

To change the key assignment:

1. Using the mouse click on the key that needs to be changed on the keyboard layout or alternatively, choose the function from the Functions box.
2. Click **Add** below the Functions box.
3. Assign the new assignment required for the key selected. If a key combination is desired, click either the **Shift**, **Control**, or **Shift + Control** buttons.
4. Click **Apply** when satisfied with selection or click **Undo** to reassign.

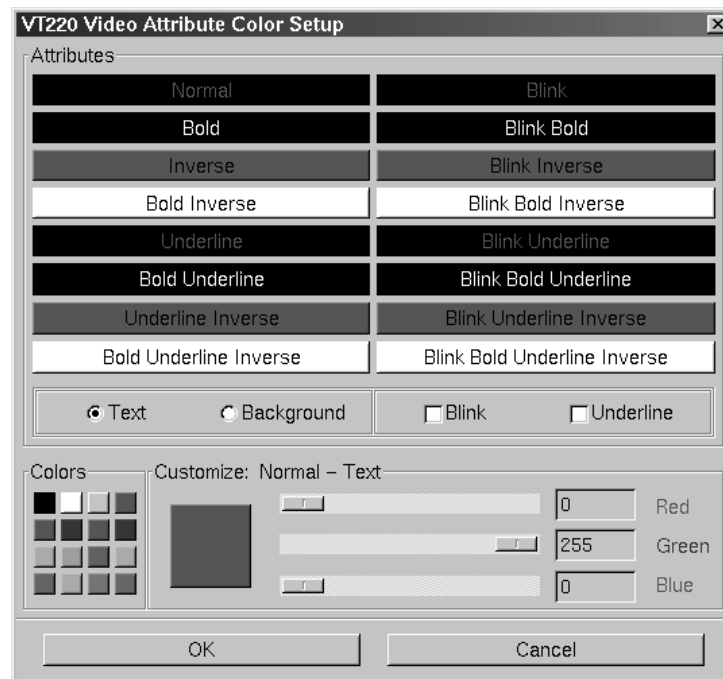
Note: A function can be applied to multiple keys. Assigning a function to a key does not unassign it from a previous definition.
5. Click **OK** to save changes and Exit, or **Cancel** to discard changes and exit. To return the key assignments to their default state, click **Default**.

Color setup

From the main VT220 application screen:

1. Click **Setup** to open the VT220 Setup screen.
2. Click **Colors**.
3. Click **Attributes** or **ANSI**.

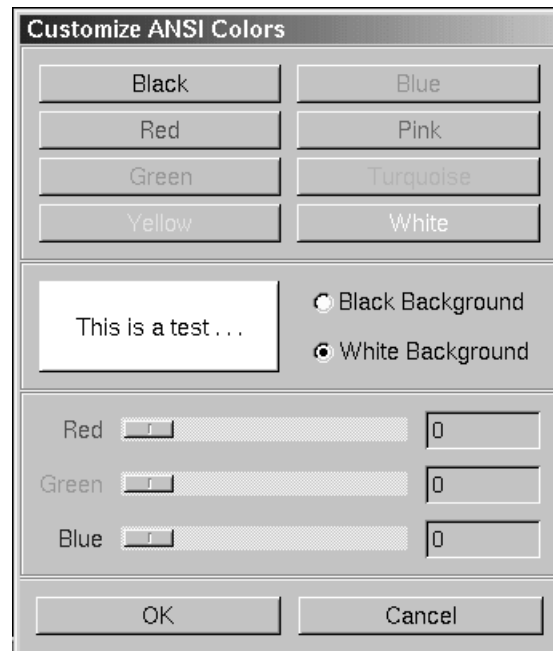
Attributes



To change the text or background color in VT220 applications:

1. Click either the **Text** or **Background** button.
2. Click the Attribute to be changed. The current color will appear in the Customize box.
3. Change the color by clicking one of the 16 color blocks, or customize the color by using the sliders. The colors in the attribute block will change accordingly.
4. Click **Blink** and/or **Underline** to apply to the selected attribute.
5. Click **OK** to save changes and exit, or **Cancel** to discard changes and exit.

ANSI



To change the color of the text or background for a VT220 session:

1. Select a color for the text.
2. Select black or white as the desired background color.

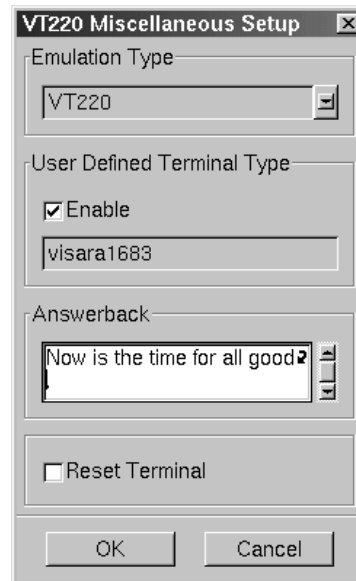
The shades of text color may be adjusted using the sliders or by entering a RGB value. The changes will appear, as they are made, in the test block.

Click **OK** to save changes and exit, or **Cancel** to discard changes and exit.

Miscellaneous setup

From the main VT220 application screen:

1. Click **Setup**.
2. Click **Miscellaneous**. The VT220 Miscellaneous Setup screen is shown below:



The screenshot shows a dialog box titled "VT220 Miscellaneous Setup". It contains three main sections: "Emulation Type" with a dropdown menu showing "VT220"; "User Defined Terminal Type" with a checked "Enable" checkbox and a text field containing "visara1683"; and "Answerback" with a text field containing "Now is the time for all good". At the bottom, there is an unchecked "Reset Terminal" checkbox and two buttons labeled "OK" and "Cancel".

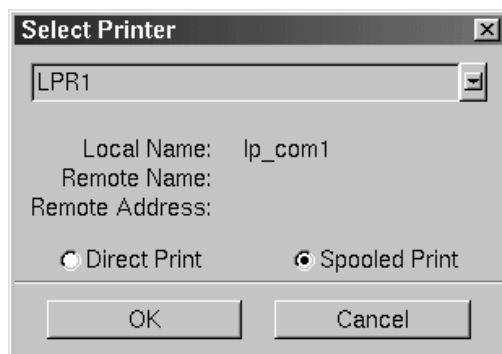
- **Emulation Type** – Displays emulation type to be used (only VT220 currently supported)
 - **User Defined Terminal Type** – Terminal type string sent to the host.
 - **ANSWERBACK** – Enter the Answerback string.
 - **RESET Terminal** – Select to reset the Emulator.
3. Click **OK** to save changes and exit, or **Cancel** to discard changes and exit.

Printer setup

From the main VT220 application screen:

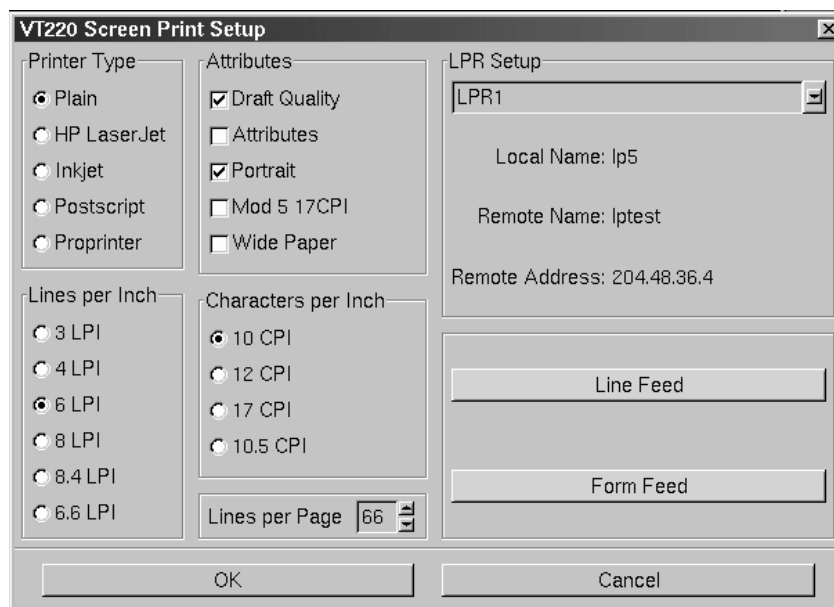
1. Click **Setup**.
2. Click **Printer**.
3. Select **Host Print** or **Screen Print**.

Host Print



Select the appropriate printer from the list of configured LPR printers.

Screen Print



- **Printer Type** – Specifies the printer driver to use when printing.
- **Lines per Inch** – Specifies the number of Lines Per Inch to print.
- **Characters per Inch** – Specifies the number of Characters Per Inch to print.
- **Lines per page** – Specifies the number of Lines per Page to print. Selectable range is 0-255.

- **Draft Quality** – Prints draft quality when selected. Otherwise printing is letter quality.
- **Attributes** – If selected, prints intensified characters as bold and underlined when required.
- **Portrait** – If enabled, prints in Portrait mode. If disabled, prints in Landscape mode.
- **Mod 5 17 CPI** – If selected, printing automatically changes to 17 CPI (characters per inch) if the application screen is Mod 5.
- **Wide Paper** – If enabled, allows printing of more than 80 characters per line. This setting is generally used when Proprinter is selected as the Printer Type.
- **LPR Setup** - Select the defined printer that will receive VT220 print jobs. Once selected, the Local Name, Remote Name, and Remote Address will be displayed below the LPR Printer Window.
- **Line Feed** – Sends an immediate Line Feed to the selected printer.
- **Form Feed** – Sends an immediate Form Feed to the selected printer.

Macro Record/Playback

The VT220 macro function enables you to reduce the number of keystrokes required for a frequently repeated entry such as a logon sequence. Unique keystroke sequences can be stored for each of the 24 function keys on the keyboard. The entered keystroke sequences are stored in nonvolatile memory, which means that the data is retained even if the power is turned off.

Note: There is a 7000 key limit on the length of each macro.

Recording Macros

Follow the steps below to store macros.

1. From the main VT220 screen, click **Macro**.
2. Click **Dialog**. The macro dialog screen will appear.

TN3270 Macro Control - Session A						
Play		Record		Quit		Name
Pause		Delay				Delete
F1	F2	F3	F4	F5	F6	
F7	F8	F9	F10	F11	F12	
F13	F14	F15	F16	F17	F18	
F19	F20	F21	F22	F23	F24	
Close						

3. Click **Record**. The color of the Record button will change to green, indicating that it is active.

4. Click the F# that you wish to record. That button will be highlighted, and **R F(#): (#) ks** will appear on the operator status row of the VT220 screen. The **R** indicates Record, **F(#)** to show which F# was chosen for this macro and **(#) ks** to track how many keystrokes have been entered on this macro.
5. Type the keys to be associated with the macro.
6. Click the **Record** key again to save the macro and exit macro record mode. Press the **Quit** key to abandon the macro and exit record mode.
Note: F# buttons that have not been associated with a macro will appear grayed out on the macro dialog screen. To confirm that a key has not been used and to avoid inadvertently recording over an existing macro, check the status line after selecting the F# key. If there is no macro associated with this key, the number of keystrokes (ks) will be displayed as 0.

Naming Macros

In addition to associating an F# to a macro, a name or short description may also be saved with each macro. To store a macro name:

1. After recording the macro, click **Name**.
2. Click the **F#** key. The Function Namer dialog box will appear.
3. Enter a name for the macro.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Playing Macros

Follow the steps below to initiate macros:

1. Click the **Play** key within the dialog box, or select **Play** from the Macro pulldown menu.
2. Click the F# key associated with the macro you wish to recall.
3. The macro will automatically be recalled.
4. The macro will automatically terminate once all keys have been played. If you desire, the macro may be terminated at any point by pressing the **Quit** key. If the key pressed to exit macro play mode was anything other than Quit, there will be a beep to notify you of the (possibly unintentional) cancellation.

Pauses and Delays

There are certain key sequences, such as a logon password, that a user may wish to exclude from a macro. At any point while recording a macro key sequence, the **Pause** key may be clicked to temporarily suspend record mode. The keystrokes from this point forward will not be recorded within the macro until macro record mode is resumed by pressing the **Record** key. The **Quit** key will abandon the macro, even while macro record is paused.

If the **Pause** key is pressed while in macro record mode, besides suspending recording, it will be embedded within the macro and cause the macro to pause automatically each time it is played back.

While playing back a macro the **Pause** key may be pressed to temporarily suspend the macro. At this point you may type in normal mode. Pressing the **Play** key will resume the macro. The **Quit** key will abandon the macro and return you to normal mode, even while macro play is paused.

If delays are desired within macros, the Delay key may be clicked while in record mode to embed an approximately one second delay within the macro. This may be clicked multiple times to extend the length of the delay.

VT3270

What is VT3270?

Like Telnet, VT3270 enables access to programs running on remote hosts. Unlike Telnet, VT3270 provides the means to access 3270 programs running on IBM mainframes.



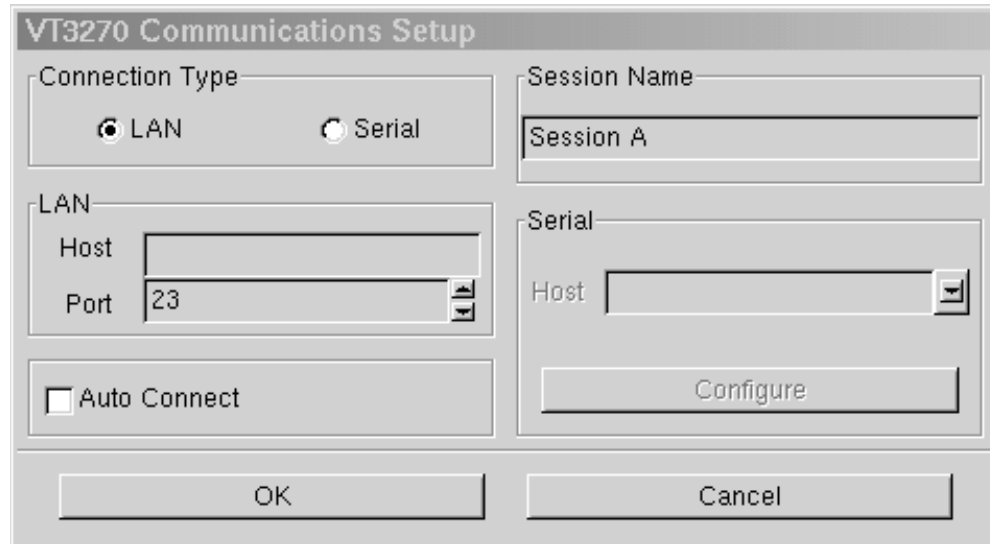
VT3270 enables the NCT to function as though it were a 3279 mod 2, mod 3, mod 4, or mod 5 terminal. Unlike Telnet, VT3270 can manipulate the entire screen image, fields and function keys, in a way identical to a 3270 terminal. VT3270 provides the following standard features:

- **Window Menus** – The window menus offer simplicity and ease of use for all setup functions.
- **Color Display** – The color monitor is programmable in seven colors.
- **Switchable Screen Formats** – VT3270 supports four (4) screen sizes that can be selected from setup menus. The server to which the VT3270 client attaches must be configured to support the screen size used. Check with your system administrator.
- **Mono/DualCase Mode** – Allows characters to be displayed as all uppercase characters or as upper- and lowercase characters.
- **Mark Unprotected Field Indicator** – The 1480 CUT Emulator can be requested to mark unprotected fields with a special character.
- **Row/Column Indicator** – Displays the current cursor location on the operator status row.
- **Numeric Lock** – Allows a field to be defined to accept only numeric characters and the Period, Minus, and Dup keys. The comma may be substituted for the period on some international keyboards.
- **Multiple Sessions** – A maximum of 10 sessions can be accessed with this emulator.

Setting up a remote host as a 3270 terminal

To setup a remote host:

1. Click the **Start** button in the lower left-hand corner of the screen. The application menu will appear.
2. Click **VT3270**. The main VT3270 screen will appear with two menu options, **Setup** and **Session**.
3. Click **Setup**.
4. Click **Communications** from the Setup menu. This screen will appear:



The image shows the 'VT3270 Communications Setup' dialog box. It has a title bar with the text 'VT3270 Communications Setup'. Inside, there are two main sections: 'Connection Type' and 'Session Name'. The 'Connection Type' section has two radio buttons: 'LAN' (selected) and 'Serial'. Below this, there are two sub-sections: 'LAN' and 'Serial'. The 'LAN' section has a 'Host' text box and a 'Port' spinner box set to '23'. The 'Serial' section has a 'Host' text box with a dropdown arrow. There is an 'Auto Connect' checkbox which is currently unchecked. At the bottom right of the dialog is a 'Configure' button. At the very bottom are 'OK' and 'Cancel' buttons.

- **Connection Type** – Select **LAN** to configure a VT3270 LAN session. Select **Serial** to configure a TN3287 Serial session. (Serial port not available on 300.)
- **Session Name** – Enter the name to be displayed in the window title.
- **Host** – Enter the Internet address of the VT3270 server to which you wish to connect, for example, 255.255.XXX.XXX.
- **Port** – If the host requires that a port number (other than port 23) be specified when connecting, select the port number using the up and down arrows or by typing the port in directly.
- **Auto Connect** – Select to auto connect at program start and to reconnect automatically if disconnected by the server.

Click **OK** to save changes and close Communications Setup, or **Cancel** to close and discard any changes.

Connecting to a VT3270 session

VT3270 will connect to the remote IBM mainframe host. The host then will normally respond with a welcome and will lead you through its log in process. Log in, employing one of the following combinations:

- With the userid and password supplied by the administrator of the host
- With just a userid (some hosts do not require passwords)
- Neither, if the remote host has been set up for it.

To connect to a VT3270 remote host from the main VT3270 screen:

1. Click **Session** to open the VT3270 Session menu.
2. Click **Connect**.

Once connected, use the menus, commands and features of the remote host to access and run 3270 applications.

Logging out of a remote host

1. When you have finished using the remote host, use the host's normal log out command.
2. To disconnect from the host, select **Disconnect** from the **Session** menu.

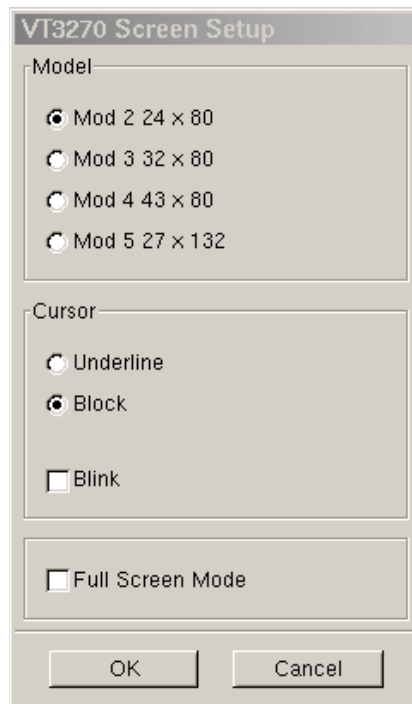
Configuring VT3270 for an application

VT3270 can be configured for a particular application by selecting **Screen**, **Keyboard** or **Color** from the Setup menu.

Screen setup

From the main VT3270 application screen:

1. Click **Setup** to open the VT3270 Setup menu.
2. Click **Screen**.



- **Model Size** – Select the mod required by the design of the application program. Applications are designed to use one of the above mods, based on the number of rows per screen and characters per row, respectively. The default is Mod 2.
- **Cursor** – Choose either an underline cursor or a block cursor. Select **Blink** for a blinking cursor.
- **Full Screen Mode** – Select to open the VT3270 application in Full Screen Mode. VT3270 must be closed and reopened for this setting to become effective.

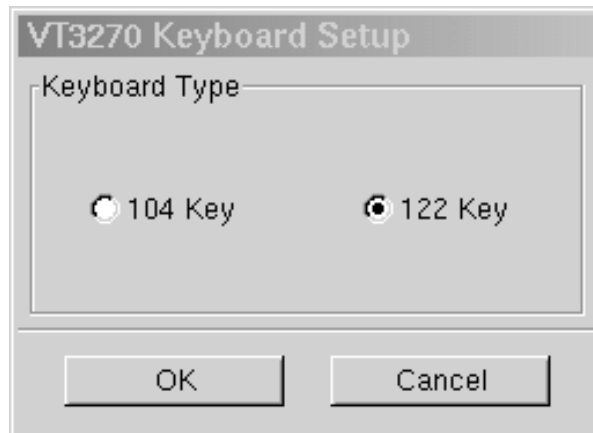
Note: To access the taskbar or minimized applications on the taskbar while Full Screen Mode is in effect, hold down the Ctrl and Alt keys while pressing the tab key. Press the tab key repeatedly until the name of the application you wish to bring to the front is displayed.

Click **OK** to save changes and close Screen Setup, or **Cancel** to close and discard any changes.

Keyboard setup

From the main VT3270 application screen:

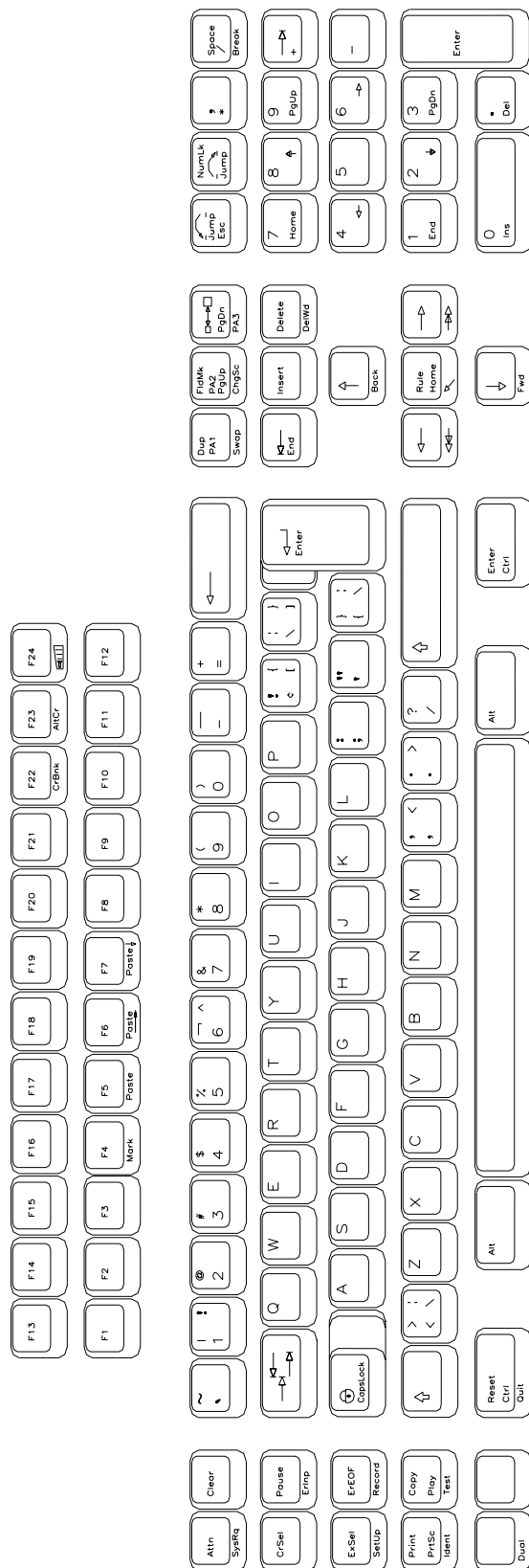
1. Click **Setup** to open the VT3270 Setup menu.
2. Click **Keyboard**.



- **Keyboard Type** – Select either the 104 or 122-key keyboard.

Click **OK** to save changes and Exit, or **Cancel** to discard changes and exit. To return the key assignments to their default state, click **Default**.

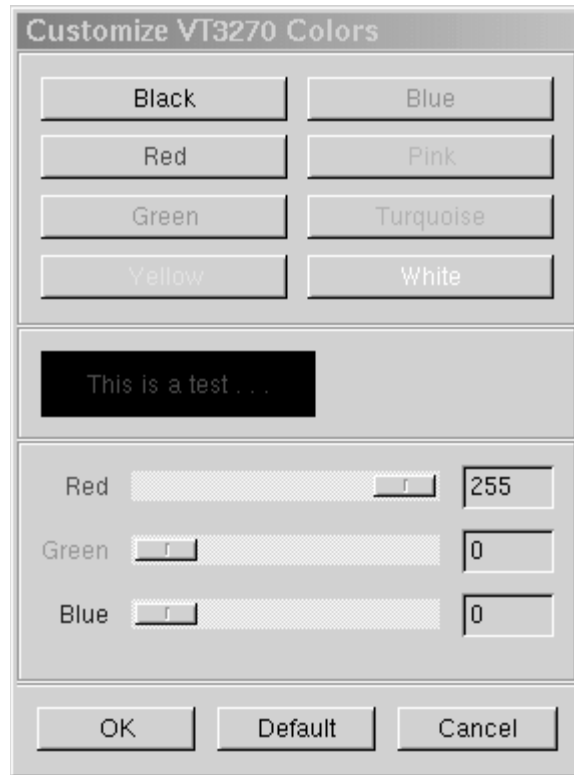
Note: VT3270 application must be closed and restarted for changes to become effective.



Color Setup

From the main VT3270 application screen:

1. Click **Setup** to open the VT3270 Setup menu.
2. Click **Colors**.

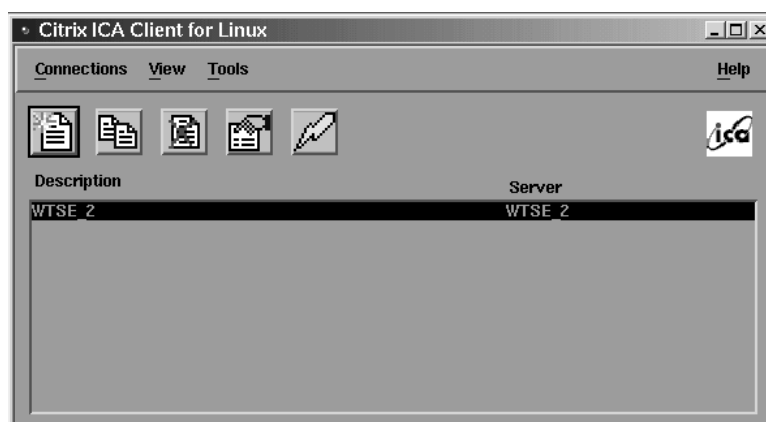


1. Use the arrows to select colors from the Colors list on the right. Select for protected, unprotected, normal and highlighted fields.
2. Click **OK** to save changes and close Color Setup, or **Cancel** to close and discard any changes.

Chapter 7. Microsoft Servers

Citrix ICA Client Connection

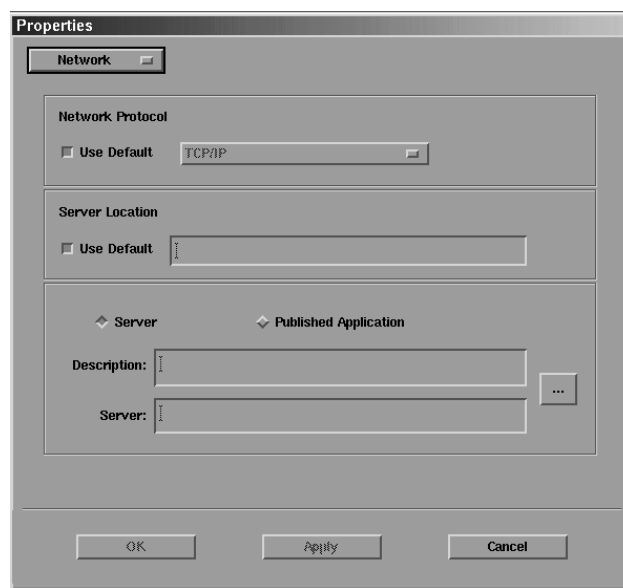
To create a new connection or to start an existing ICA connection, select **Start, Programs, Microsoft Servers, ICA**. The ICA Connections screen will appear.



Connection Properties

To create a new connection select **New** from the Connections menu. The Properties screen will appear.

Network

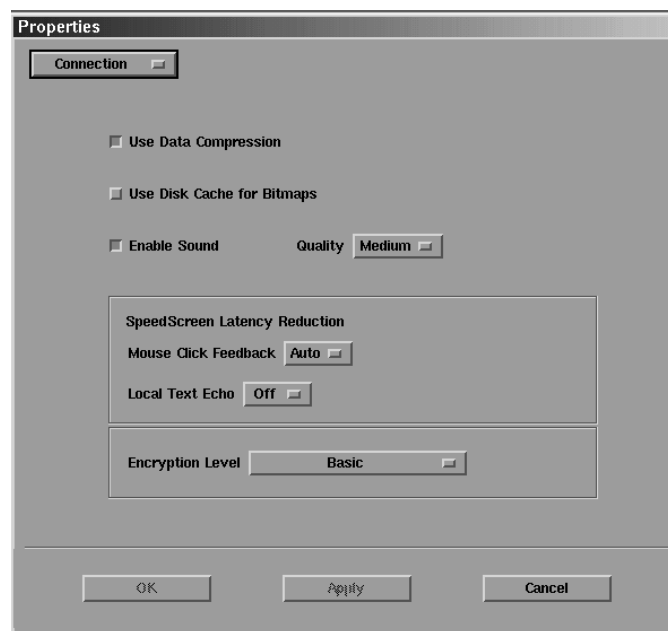


- **Network Protocol** – Select to use the Default Network Protocol, or choose the desired protocol from the list.

- **Server Location** – You may either use the Default Server Location or specify a server location by typing it in the field.
- **Server** – Select this to configure a connection to a server.
- **Published Application** – Select to configure a connection to a published application.

Enter a description of the connection in the Description field. Specify the server either by its name or its IP address. To get a list of servers or published applications, click the ... (browse) button.

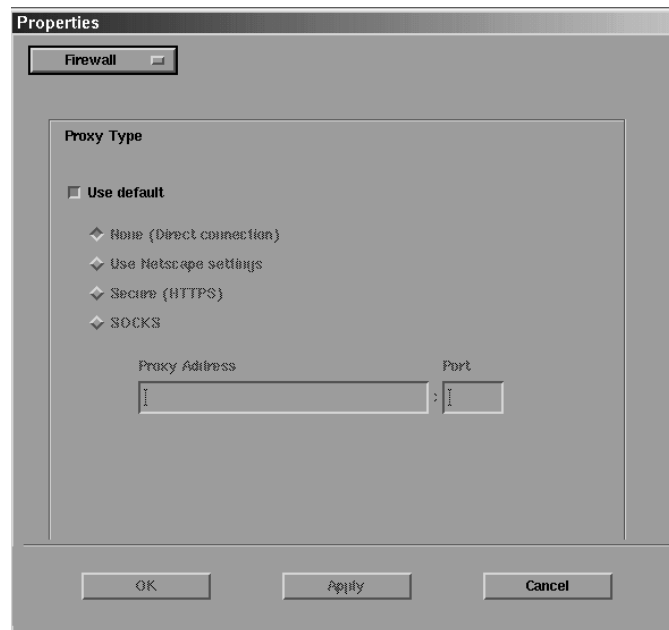
Connection



- **Use Data Compression** – Select to compress the data transferring between the terminal and server.
- **Use Disk Cache for Bitmaps** – Disk caching stores commonly used bitmaps (images) locally on the client so that they are not transferred over the server connection every time they are needed.
- **Enable Sound** – Select this option to enable sound support. Published applications will be able to play sounds on your client.
 - **High** – This value provides the greatest audio quality but should only be used when bandwidth consumption is not a concern.
 - **Medium** – Using this value results in less bandwidth consumption than when using High. Compression of sound data provides greater bandwidth efficiency but reduces sound quality somewhat. This value is recommended for most LAN based connections.
 - **Low** – This value offers the most efficient use of bandwidth but also decreases sound quality severely. This value is recommended for low-bandwidth connections, including most modem connections.
- **Speed Screen Latency Reduction**
 - **Local Text Echo** – Accelerates the display of the input text on the client device, effectively shielding the user from experiencing latency on the network.

- **Mouse Click Feedback** – Provides visual feedback for mouse-clicks. When the user clicks the mouse, the ICA Client immediately changes the mouse pointer to an hourglass pointer which indicates to the user that the input is being processed.
- **Encryption Level** – Select the level of encryption for the ICA connection. Strong encryption using the RC5 algorithm is available with SecureICA Services. SecureICA Services enables RSA RC5 encryption with 40, 56, or 128-bit session keys. Select RC5 128-bit Login Only to use encryption during authentication. The Citrix server must be configured to allow the selected encryption level or greater. For example, if the Citrix server is configured to allow RC5 56-bit connection, the IA client can connect with RC5 56- or 128-bit encryption.
Note: Selecting RC5 encryption disables automatic logon to the Citrix server.

Firewall



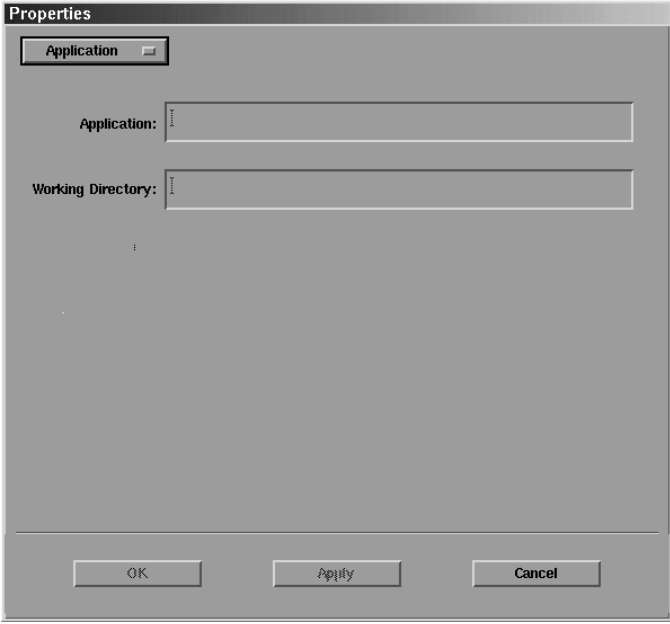
- **Proxy Type**
 - **Use Netscape settings** – Automatically detect and use the proxy server settings used by the Web browser.
 - **Secure (HTTPS)** – To specify a Secure proxy server manually select this box. Type the address or IP number in the Proxy Address field and the port number in the Port field for the Secure proxy server.
 - **SOCKS** – To specify a SOCKS proxy server manually select this box. Type the address or IP number in the Proxy Address field and the port number in the Port field for the SOCKS proxy server.

Window



- **Window Colors** – Allows you to set the number of window colors to 16, 256, 32 thousand, or 16 million. Before selecting a new color mode, ensure that it is supported on your machine.
- **256 Color Mapping** – Allows you to set up 256 color sessions to use approximate or exact colors.
- **Window Size**
 - **Fixed Size** – If this is selected the desired height and width may be entered in a window that opens below.
 - **Percentage of Screen Size** – If this is selected the desired percentage may be entered in a window that opens below.
 - **Full Screen** – If this is selected the window below will indicate that Full Screen has been chosen.

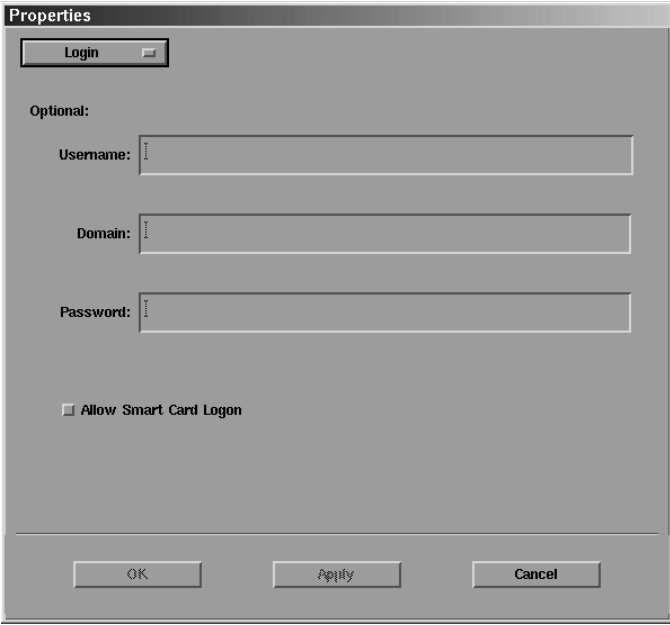
Application



The screenshot shows a 'Properties' dialog box with the 'Application' tab selected. It contains two text input fields: 'Application:' and 'Working Directory:'. At the bottom, there are three buttons: 'OK', 'Apply', and 'Cancel'.

- **Application** – Enter the pathname for the application to be run after connecting to the server.
- **Working Directory** – Enter the pathname of a directory to be used with the application.

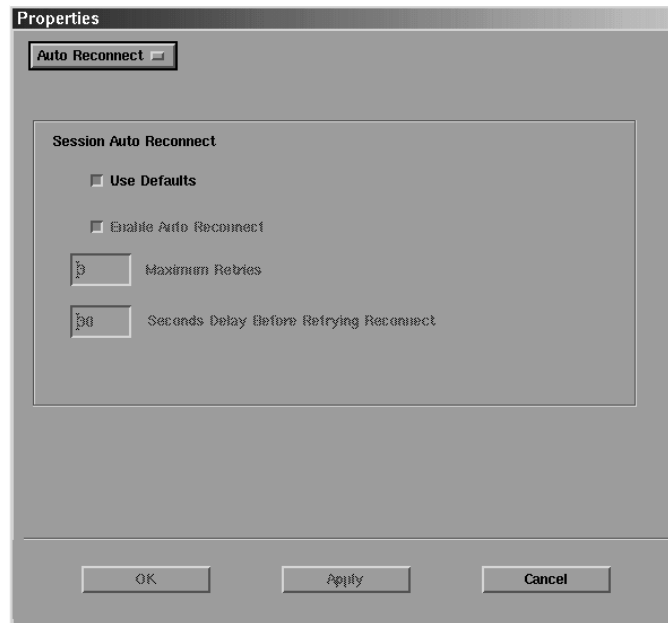
Login



The screenshot shows a 'Properties' dialog box with the 'Login' tab selected. It contains three text input fields: 'Username:', 'Domain:', and 'Password:'. Below these fields is a checkbox labeled 'Allow Smart Card Logon'. At the bottom, there are three buttons: 'OK', 'Apply', and 'Cancel'.

To automatically log on to the server upon connection, enter the **User Name**, **Domain**, and **Password** fields. Select **Allow Smart Card Logon** to use smart cards to authenticate users to servers.

Auto Reconnect



Select to Auto Reconnect when the ICA Client detects a disconnected session. Enter the desired number of connection retries and the number of seconds between each.

Copy

To copy a connection that has been previously configured, highlight the connection name in the Connections window and select **Copy** from the Connections menu.

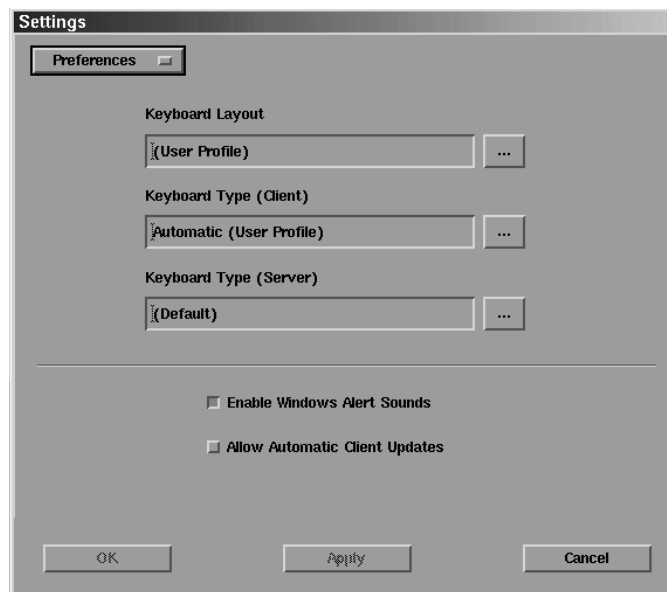
Delete

To delete an existing connection, highlight the connection name in the Connections window and select **Delete** from the Connections menu.

Configuring Default Settings

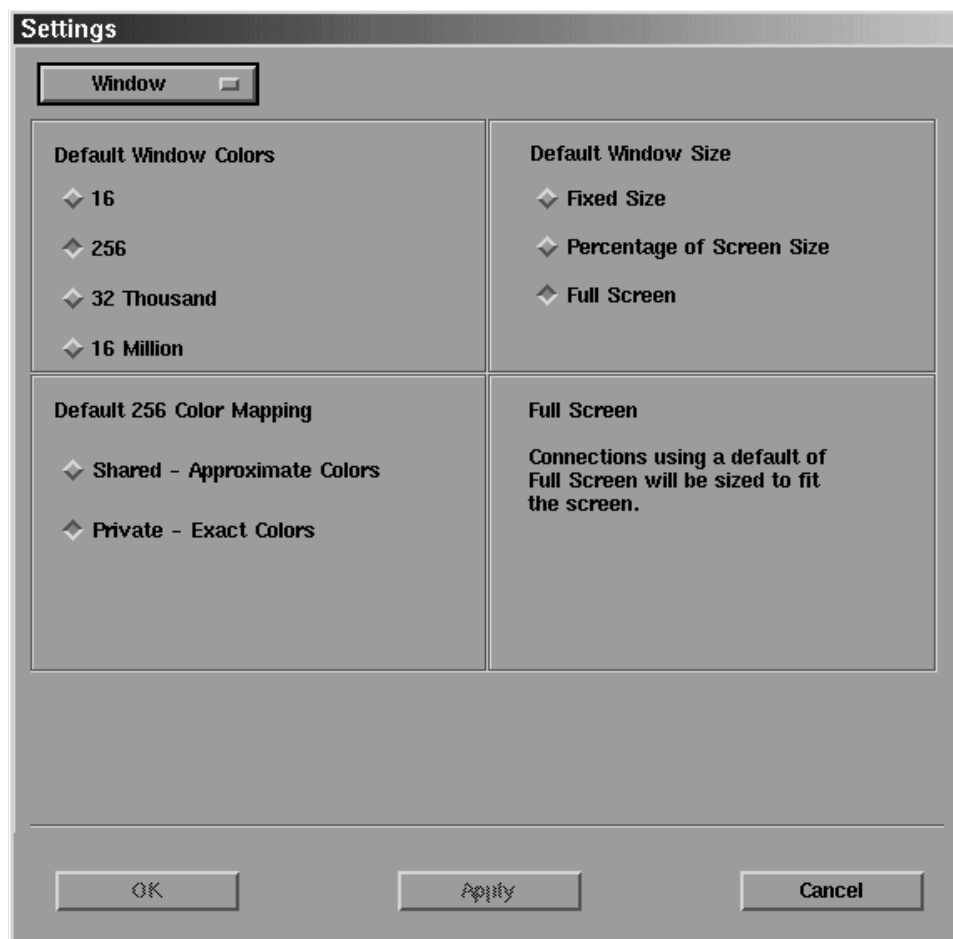
The Settings configuration screens will allow the user to define the default settings for all remote ICA application entries. These settings are used as the default for all new connections. Default settings may be overridden by disabling the default selection and entering your own values when creating a new ICA connection from the Connections screens.

Preferences



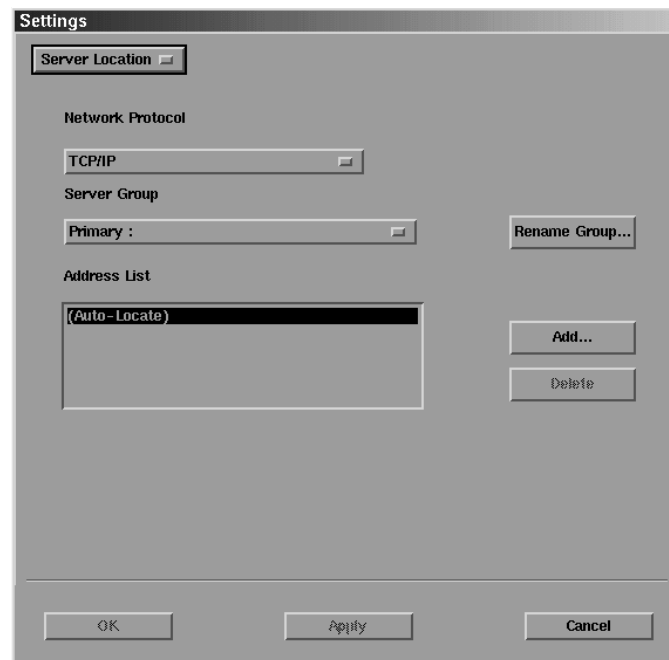
- **Keyboard Layout** – Select the language you want to type in.
- **Keyboard Type (Client)** – Select the current workstation keyboard type.
- **Keyboard Type (Server)** – Select the specific physical keyboard type you are using.
- **Enable Windows Alert Sounds** – Select to allow the local workstation to play alert sounds.
- **Allow Automatic Client Updates** – Allows the client software at the workstation to be updated automatically when a newer version is available.

Window



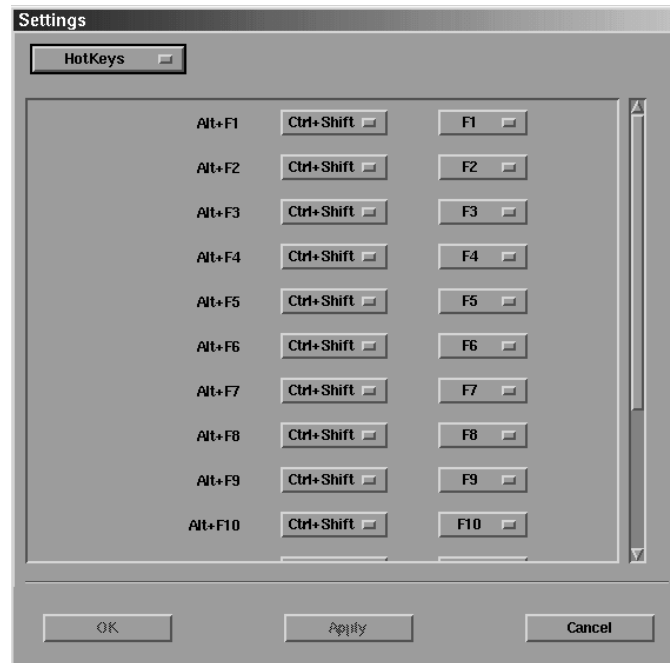
- **Window Colors** – Allows you to set the number of widow colors to 16, 256, 32 thousand, or 16 million. Before selecting a new color mode, ensure that is it supported on your machine.
- **256 Color Mapping** – Allows you to set up 256 color sessions to use approximate or exact colors.
- **Window Size**
 - **Fixed Size** – If this is selected the desired height and width may be entered in a widow that opens below.
 - **Percentage of Screen Size** – If this is selected the desired percentage may be entered in a widow that opens below.
 - **Full Screen** – If this is selected the window below will indicate that Full Screen has been chosen.

Server Location



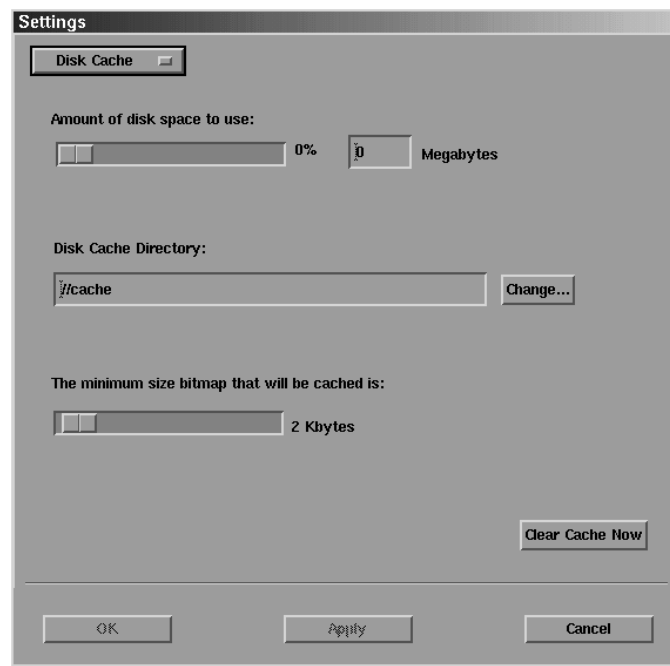
- **Network Protocol** – Choose the desired protocol from the list.
- **Server Group** – Use the Server Group and Address List fields to create lists of specific servers that you want to designate as primary and backup servers for connecting to application sets. Backup server groups provide business recovery for you client i the event that you cannot contact any servers in your primary group. You can define up to three groups of Citrix servers to which you want to connect: a primary and two backups. Each group can contain from one to five servers. When you specify a server group for your client, the client attempts to contact all the servers within that group simultaneously (broadcasting) and the first server to respond is the one to which you connect. Use this field to designate whether the servers entered in the Address List field belong to your Primary, first backup (Backup1), or second backup (Backup2) group.
- **Address List** – Use the address list field to view and change the list of Citrix servers used in the selected server group. If you have not selected any servers, [Auto-Locate] is selected by default.

Hot Keys



Hotkeys are used to control the behavior of the client and as substitutes for the standard Windows hotkeys for a published application. Hotkey functionality allows you to map common key combinations to a key combination that is ignored by your local operating system.

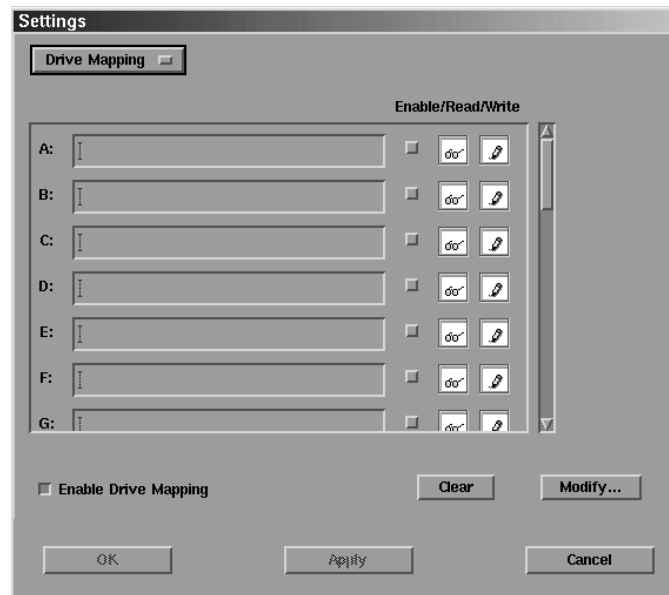
Disk Cache



- **Amount of disk space to use** – Move the slider to the right or enter a specific amount (in megabytes) of space used to store web pages and graphics.

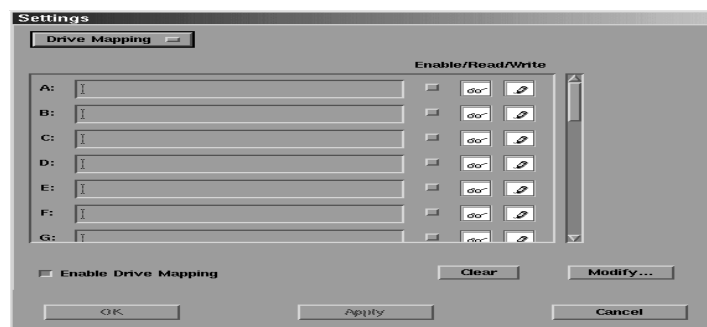
- **Disk Cache Directory** – Specify the location on the hard drive where cached files will be stored.
- **The minimum size bitmap that will be cached is** – To specify the minimum size of bitmaps that will be stored in the cache directory.
- **Clear Cache Now** – Click this button to delete all files stored in the disk cache directory.

Drive Mapping



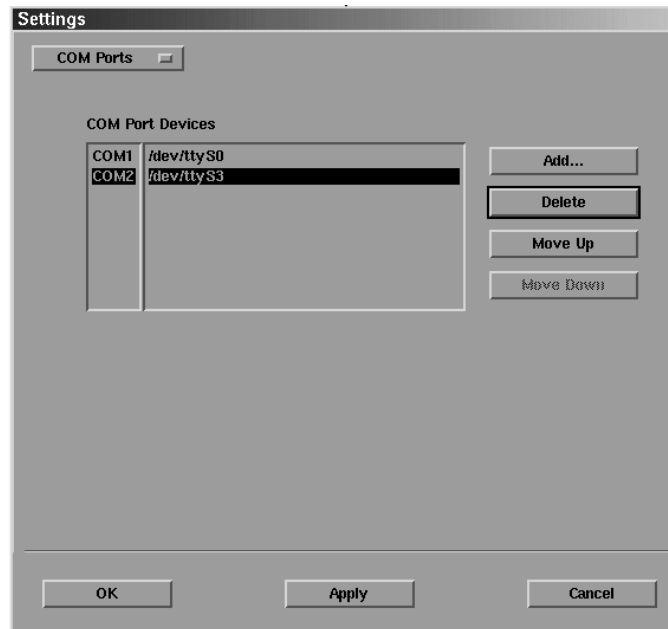
Client drive mapping makes any directory mounted on a client workstation available to the user during ICA sessions. To specify the drives and directories to automatically map during logon:

1. Click the check box in the Enable column next to an available drive letter and then click the field for the drive.
2. Click **Modify**. Select the directory you want to map and click **OK**.
3. The mapped directory appears in the Drive Mapping list.
4. Specify the access for the drive by clicking the corresponding read/write icons:



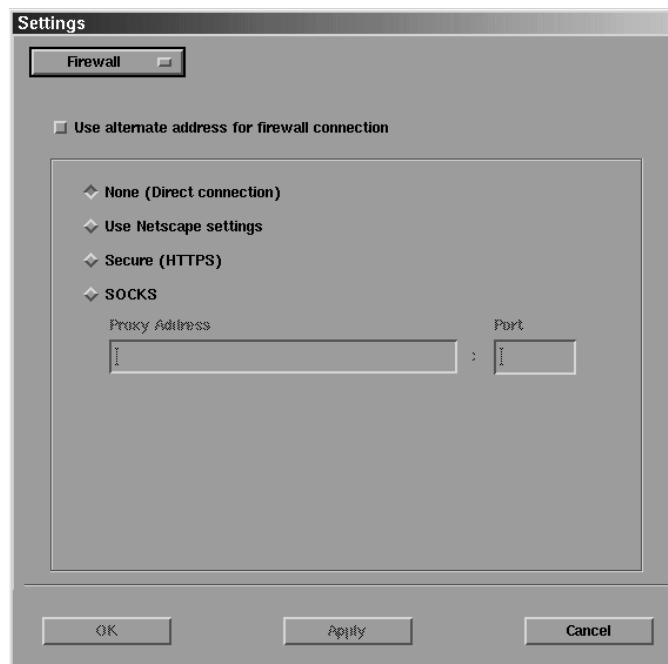
5. Make sure **Enable Drive Mapping** is selected. Click **OK**. Log off from any server connection already established and reconnect. The same drive mapping and access settings will apply to all connection entries.

COM Ports



You can perform bidirectional mapping of serial devices on the client device (for example, /dev/ttyS0 on Linux) to server COM ports. This allows a user at the client workstation to use local devices like modems, serial printers, and barcode scanners seamlessly from the applications running on the server.

Firewall

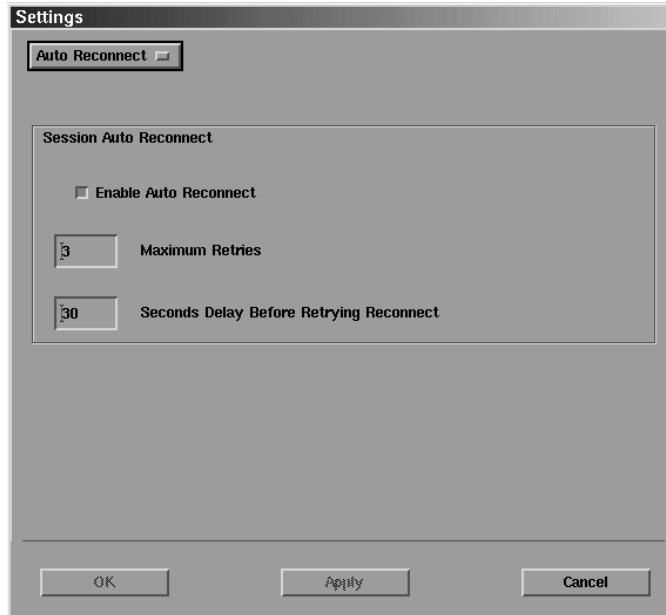


To connect to a server through a firewall:

1. Click **Use alternate address for firewall connection**.

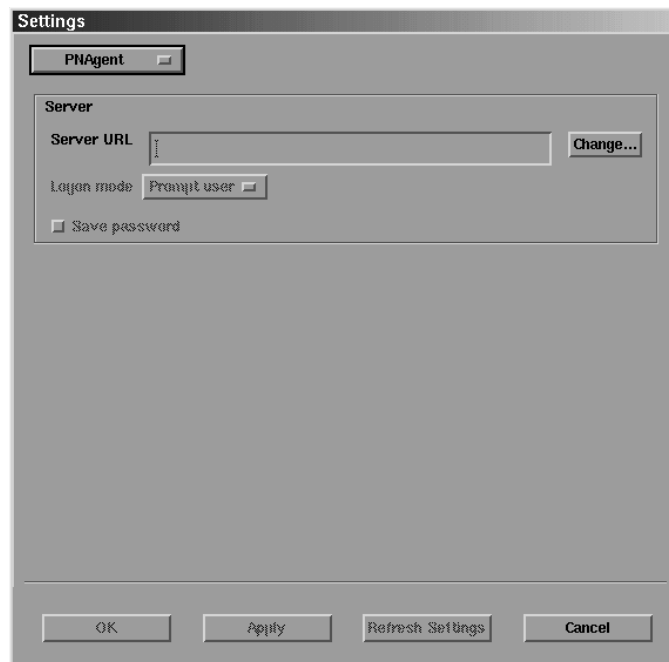
2. Add the external address of a server that is on the subnet to which you want to connect to the Address List in the Server Location page.

Auto Reconnect



Select to enable Auto Reconnect. Enter the desired number of connection retries and the number of seconds between each.

PNAgent

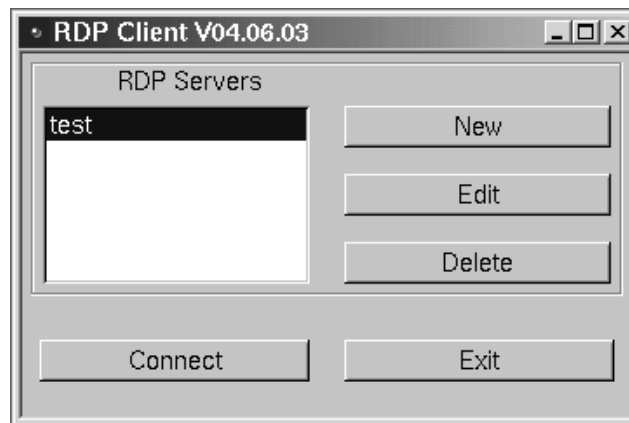


- **Server URL** – Enter the name or full URL of the configuration file on the server that you want to use.
- **Logon Mode** – Select a logon method for the resources that are to be accessed through the web interface.
- **Save Password** – Select to save the logon password on this workstation.

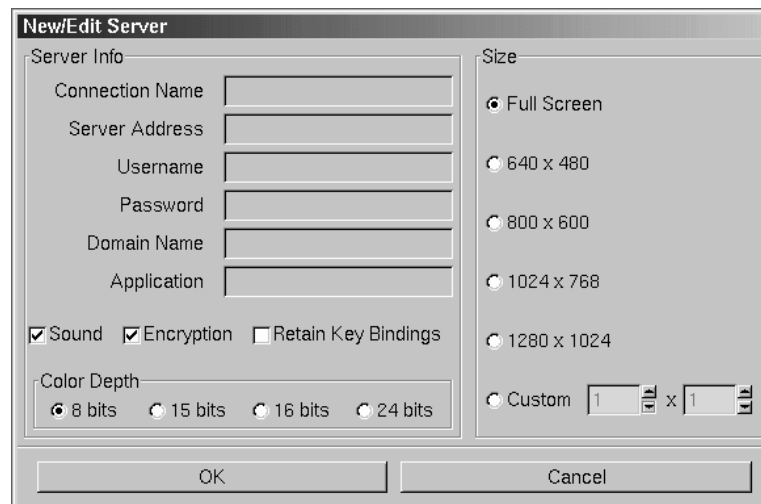
RDP

The RDP (Remote Desktop Protocol) Client is an integral part of the Windows-based Terminal. The RDP client enables a Visara Windows-based Terminal to connect to a Microsoft Windows NT TSE server to run PC applications. This thin client model provides a high performance, cost-effective, and secure way to deploy, manage, and access business-critical applications throughout an enterprise.

Creating a New Connection



Connections are created from the main window. Select **New**.



Enter the Server Info and Size selection, click **OK**.

Starting a Connection

Once a connection is configured, highlight the connection in the Main Menu and click the Connect button to begin the session or double click on the connection in the Main Menu.

Chapter 8. Setup

NCT Configuration Program

The NCT Configuration program is the central configuration tool of the Thin Client. It can be started on the Thin Client by choosing **Settings** and then **General** from the Start Menu. The Setup screen appears as follows:

The screenshot shows a window titled "Configuration Utility V04.01.15". It has a menu bar with the following items: Product Data, Network, Hosts/DNS, Screen, Security, NFS, Printers, Language, and Start Menu. The "Network" tab is selected. The main area contains the following fields:

Network Type	Ethernet	DNS Server	24.25.4.109
IP Address	192.168.1.105	Domain Name	nc.rr.com
MAC Address	00:90:DC:02:1C:42	Serial Number	M338118781
Subnet Mask	255.255.255.0	Integration Level	010
Host Name	myhostname	Date of Manufacture	Jul 9 16:23:00 2005
Default Gateway	192.168.1.1	Place of Manufacture	NA

At the bottom of the window are two buttons: "Apply" and "Exit".

The following menus can be selected:

- **Product Data**
- **Network**
- **Hosts/DNS**
- **Screen**
- **Security**
- **NFS**
- **Printers**
- **Language**
- **Start Menu**
- **Date/Time**
- **XDMCP**
- **Font Servers**
- **Appearance**

Each of the topics is described in detail on the pages that follow.

Product Data

The screenshot shows a window titled "Configuration Utility V04.01.15" with a tabbed interface. The "Product Data" tab is selected. The window contains the following fields:

Field	Value
Network Type	Ethernet
IP Address	192.168.1.105
MAC Address	00:90:DC:02:1C:42
Subnet Mask	255.255.255.0
Host Name	myhostname
Default Gateway	192.168.1.1
DNS Server	24.25.4.109
Domain Name	nc.rr.com
Serial Number	M338118781
Integration Level	010
Date of Manufacture	Jul 9 16:23:00 2005
Place of Manufacture	NA

At the bottom of the window are two buttons: "Apply" and "Exit".

The information provided in the NCT Configuration panel will help with the determination of hardware and software levels of your unit. Information that is provided in this panel is:

- **Network Type** – Configured Network type
- **IP Address** – Configured IP Address
- **Mac Address** – Media Access Control Address - a hardware address that uniquely identifies each node of a network.
- **Subnet Mask** – Configured Subnet IP Address
- **Host Name** – Configured Host name
- **Default Gateway** – Default Gateway IP Address
- **DNS Server** – Domain Name Server primary IP Address
- **Domain Name** – Configured Domain Name
- **Serial Number** – Hardware serial number of the unit, provided during the manufacturing process.
- **Integration Level** – Software Integration level of the unit.
- **Date of Manufacture** – Date and time the unit completed final testing.
- **Place of Manufacture** – Location of the unit manufacturer.

Note: It is not necessary to choose **Apply** for each screen. However, for changes to become effective you must click **Apply** before exiting the configuration program. Some changes can be done in the running system, other changes need a restart of the window manager or the Thin Client.

Network

The network menu allows you to choose between DHCP and a fixed IP address, subnet mask, and gateway.

Configuration Utility V04.01.15

Product Data | **Network** | Hosts/DNS | Screen | Security | NFS | Printers | Language | Start Menu

Local Host Name:

Domain Name:

☒ Obtain IP address via DHCP

IP Address:

Subnet Mask:

Default Gateway:

☐ Renew unexpired DHCP lease

Apply Exit

Enter **Local Host Name** and **Domain Name** for Ethernet. The IP Address, Subnet Mask and Default Gateway must be entered, unless provided by DHCP. Select **Renew unexpired DHCP lease** to allow an IP address to be renewed if the DHCP lease has not expired.

Hosts/DNS

Configuring the Hosts/DNS menu enables the resolution of network names and IP addresses.

Configuration Utility V04.01.15

Product Data | Network | **Hosts/DNS** | Screen | Security | NFS | Printers | Language | Start Menu

☐ Hosts ☒ DNS Servers

DNS Servers

IP Address:

Host Name:

New Update Delete

Apply Exit

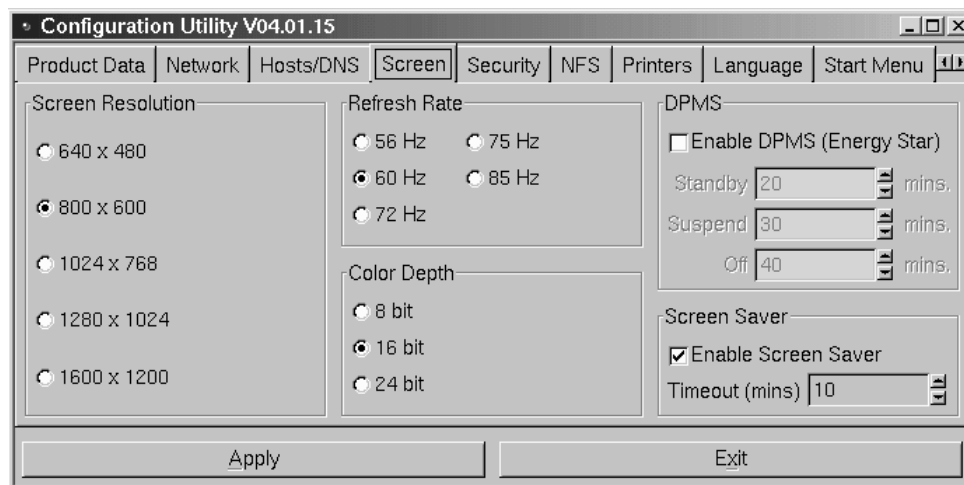
If **Hosts** is selected, pairs of names and IP addresses may be added to the `/etc/hosts` file. Enter the **IP Address** and **Host Name**, and click **New**. The host name will be added to the Host window.

If **DNS Servers** is selected, one or more DNS servers may be defined. If DHCP or BOOTP is used, the DNS information can be (but does not have to be) provided by the server. In this case the information in this field may not be used.

To add a DNS server, enter an **IP Address** and click **New**. The DNS server address will be added to the DNS Server window.

Screen

The **Screen** menu allows selection of the screen resolution, refresh rate and color depth. A screensaver may also be enabled.



Select the appropriate **Screen Resolution**, **Refresh Rate** and **Color Depth** for the monitor. If enabled, DPMS (Display Power Management System) will control the power mode of the monitor according to the timeouts set in the scroll panels. If the screensaver is enabled, a timeout of 1 to 120 minutes may be specified.

Security

The Security menu allows the user or administrator to password protect the NCT Configuration program as well as the configuration panels of the emulators. The screen lock may be enable here as well.

The screenshot shows the 'Security' tab in the 'Configuration Utility V05.12.01' window. The window has a menu bar with 'Product Data', 'Network', 'Hosts/DNS', 'Screen', 'Security' (selected), 'NFS', 'Printers', 'Language', and 'Start Menu'. The main area is divided into two sections: 'Administrator Password' and 'Screen Lock'. The 'Administrator Password' section has a checkbox 'Require Password to Configure Applications', a 'Password:' field, and a 'Verification:' field. The 'Screen Lock' section has a checkbox 'Enable Screen Lock', a 'Screen Lock Password:' field, and a 'Verification:' field. At the bottom, there is a checkbox 'Allow rsh to unit'. At the very bottom are 'Apply' and 'Exit' buttons.

Click the desired check box to enable password protection. Enter a password in the **Password** field, then reenter the same password in the **Verification** field.

Selecting **Allow rsh to unit** will allow other machines to access the unit and execute commands by using rsh (remote shell).

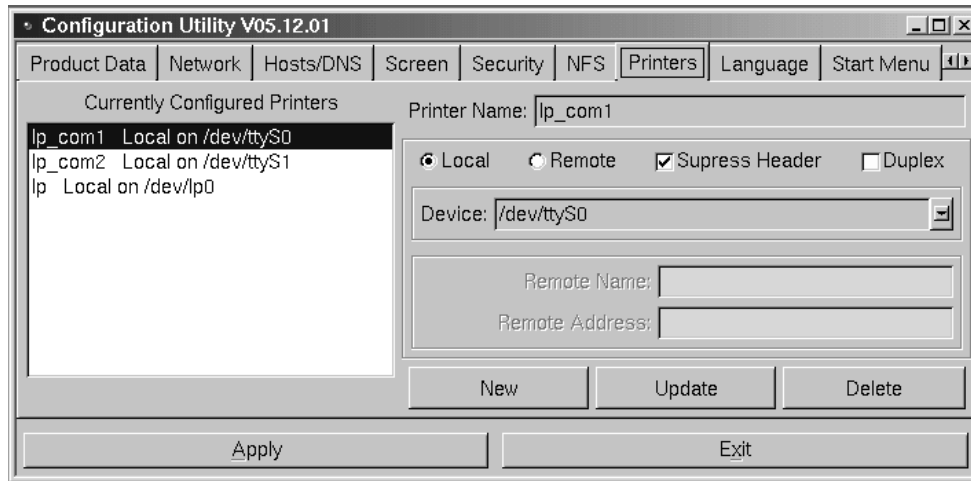
NFS

The Network File System (NFS) was developed to allow machines to mount a disk partition on a remote machine as if it were on a local hard drive. This allows for fast, seamless sharing of files across a network.

The screenshot shows the 'NFS' tab in the 'Configuration Utility V04.01.15' window. The window has a menu bar with 'Product Data', 'Network', 'Hosts/DNS', 'Screen', 'Security', 'NFS' (selected), 'Printers', 'Language', and 'Start Menu'. The main area is divided into two sections: 'NFS Mounts' on the left, which is a large empty rectangular box, and a configuration area on the right. The right area has a label 'Remote Host must not be empty.' followed by 'Remote Host', 'Remote Filesystem', and 'Local Mount Point' fields. Below these fields are three buttons: 'New', 'Update', and 'Delete'. At the bottom are 'Apply' and 'Exit' buttons.

Enter the Remote Host IP address (or name), as well as the directories for the Remote Filesystem and Local Mount Point. Click **New**; the information will be added to the NFS Mounts window.

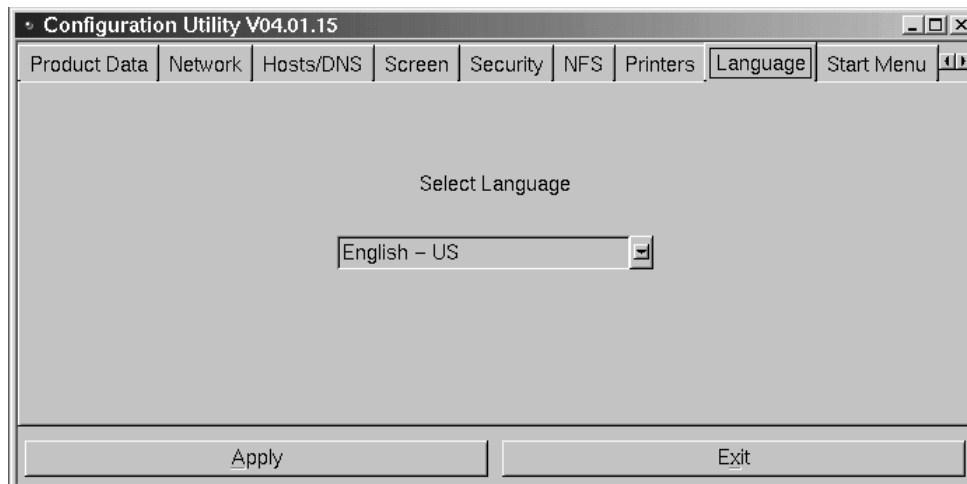
Printers



- **Currently Configured Printers** – Click with the mouse to select a printer.
- **New** – Add a new printer definition. To add a new printer, fill in the appropriate field and click **New**.
- **Delete** – Delete an existing printer definition.
- **Printer Name** – User-defined field. This name should be a descriptive name for the printer.
- **Local** – the printer is attached to the parallel or serial port on the NCT.
- **Remote** – the printer is remotely attached on the LAN.
- **Suppress Header** – Disable printing of page header
- **Duplex** – Enable duplex printing
- **Device** – If the printer is locally attached, the device name is displayed in this field indicating that the printer is attached to the specified port.
- **Remote Name** – Queue name that print jobs are sent to from an LPR-enabled device (if required).
- **Remote Address** – The IP address of the remote printer.

Language

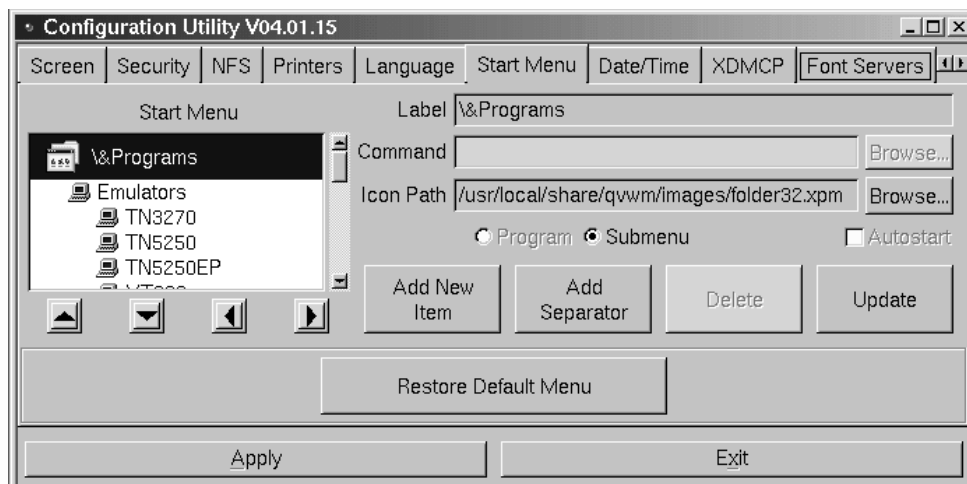
The **Language** field allows the user to choose the language of the keyboard. English, French, German, Italian and Spanish are possible. The setup program will change its language according to this choice as well as xICA and xRDP.



To change the configured language of the keyboard, click the arrow on the right of the **Select Language** scroll box and highlight the language desired.

Start Menu

The Start Menu configuration allows the user to add or remove programs from the NCT Start Menu. The Start Menu configuration also allows organization of the Start Menu by rearranging the order of programs or by sorting them into different folders.



To add a new Start Menu item:

1. Highlight an existing folder or program in the **Start Menu** scroll box. The new item will be added beneath the highlighted item.
2. Click **Add New Item**.

3. Enter the name of the folder or program into the **Label** field.
4. If the addition is a program, enter the path to the program in the **Command** field.
5. To add an icon to the menu, enter the path into the **Icon Path** field.
6. Select **Submenu** to create a folder, or the **Program** to add a program to the Start Menu.
7. Click **Update** to view changes.

To add a separator line to the Start Menu:

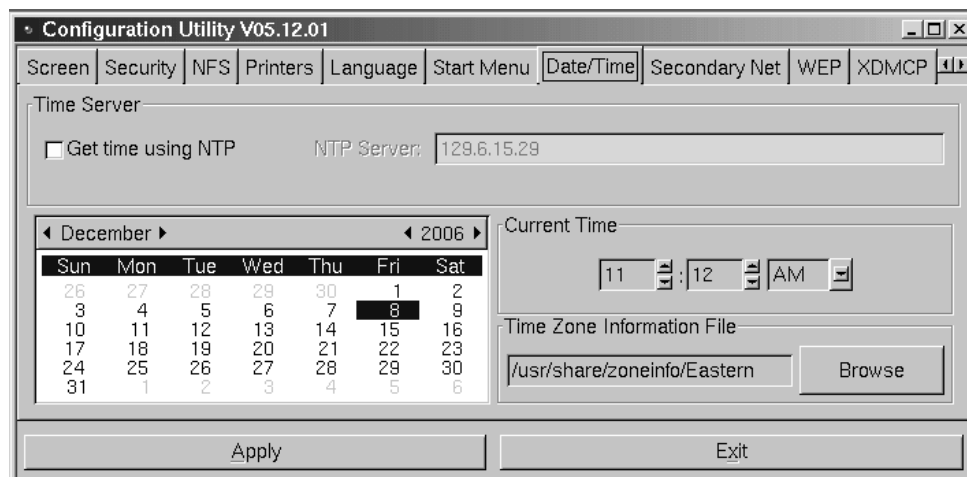
1. Highlight an existing folder or program in the Start Menu scroll box.
2. Click **Add Separator**. The Separator will appear in the Start Menu scroll box below the highlighted item.

To delete a folder, program, or separator from the Start Menu:

1. Highlight the desired item in the Start Menu scroll box.
2. Click **Delete**.

Date/Time

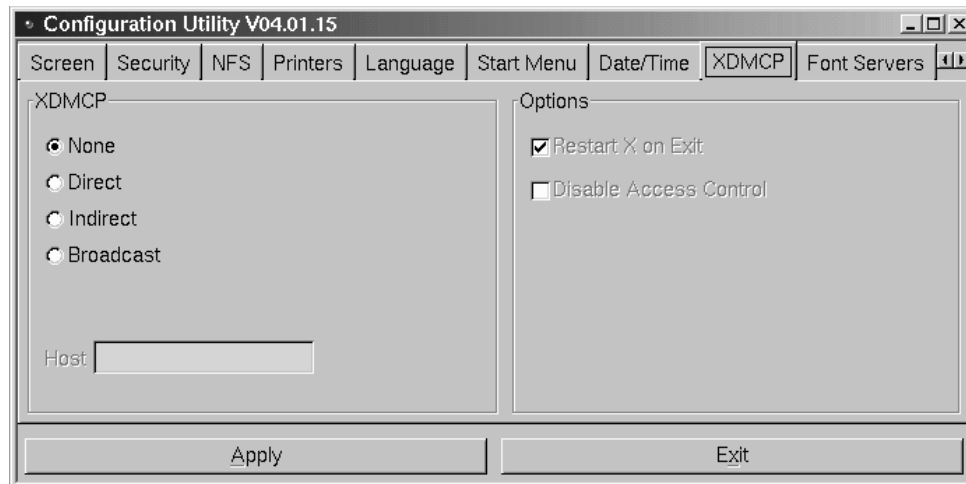
The Date/Time configuration menu allows the date and time of the unit to be set.



1. To change the month, click the right or left arrows until the appropriate month is displayed.
2. To change the year, click the right or left arrows until the appropriate year is displayed.
3. To set the day, click the cursor over the current day in the calendar.
4. Select the time by clicking the arrows to increase or decrease. To indicate AM or PM, click the arrow and select AM or PM from the list.
5. Enter (or browse to locate) the path to the Time Zone Information File.

XDMCP

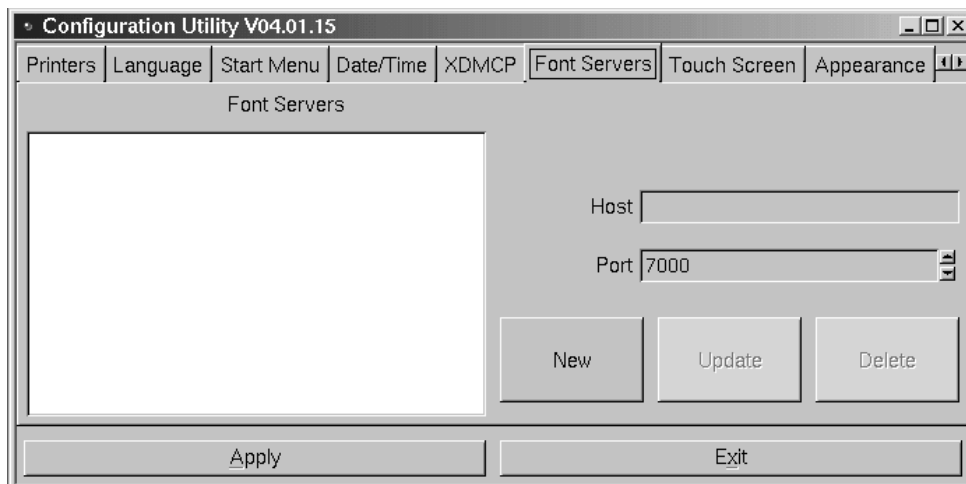
The X Display Manager Control Protocol (XDMCP) is used by X terminals to set up an X session with a remote system over the network.



Select the method of access, **Direct**, **Indirect**, or **Broadcast**. If Direct or Indirect are selected the Host name must be entered in the Host field.

Font Servers

Font Servers may be run on a network host in order for X terminals and network clients to have access to a wider variety of fonts.

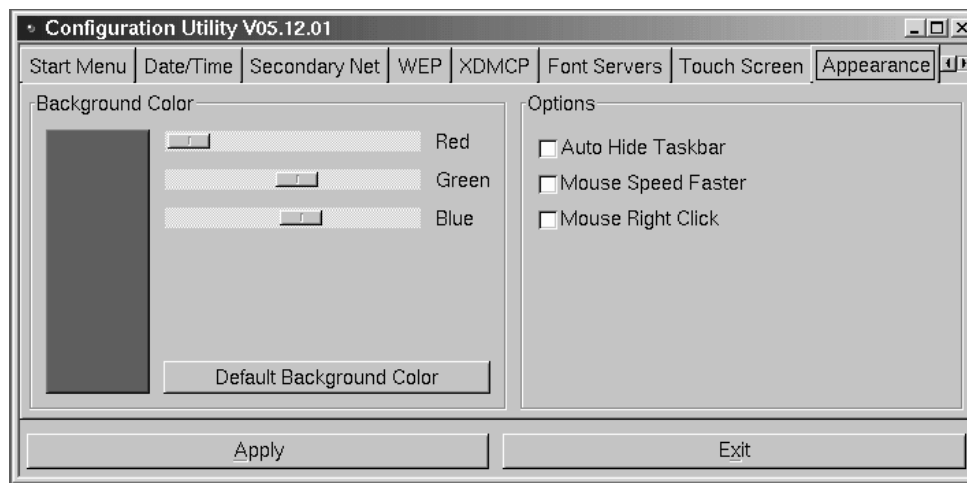


To add a new Font Server:

1. Enter the name of the **Host** and the **Port** of the font server.
2. Click **New**. The host name will be added to the font server list.

Appearance

The Appearance menu allows the user to customize their display screen.

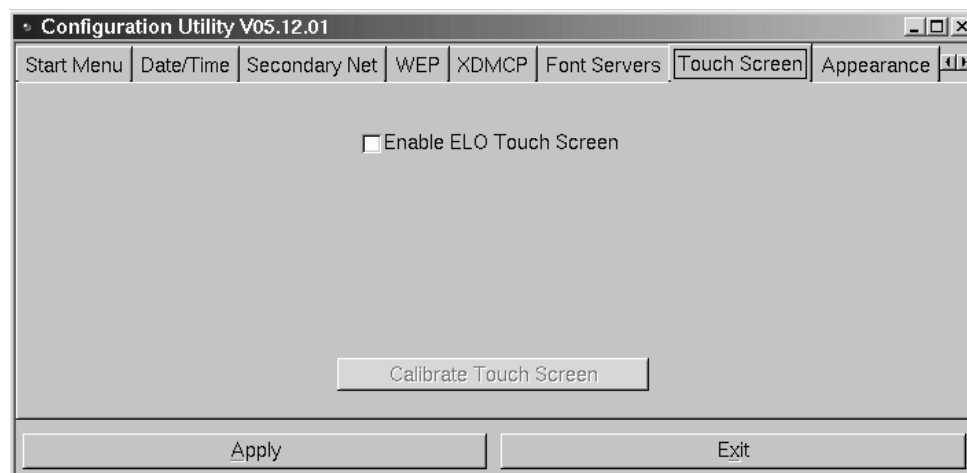


Use the sliders to select a color for the desktop background. Click **Default Background Color** to return to the system default.

If **Auto Hide Taskbar** is selected, the taskbar will not appear on the desktop. To display the taskbar, move the mouse pointer to the area at the bottom of the screen.

Touch Screen

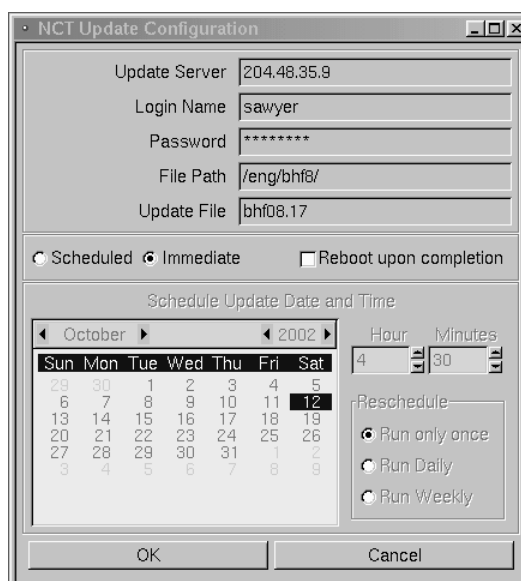
Select block to enable the Touch Screen. Once selected, the Calibrate Touch Screen button will be active and may be clicked to open the calibration screen. The Calibration Screen includes step-by-step user instructions.



NCT Update Configuration

NCT Update program allows programs and files to be updated from any FTP server on your network. Updates can be done immediately or can be scheduled to take place at a time when network traffic is at a minimum. Updates can be programs that make up a new integration level from Visara International or configuration files distributed by a system administrator.

The system administrator provides the address of the FTP server, the name and password required to access the server, and the path to the update list file on the server using the NCT Update panel (shown below), accessed from the Start menu.



The image shows the 'NCT Update Configuration' dialog box. It contains the following fields and options:

- Update Server:** 204.48.35.9
- Login Name:** sawyer
- Password:** *****
- File Path:** /eng/bhf8/
- Update File:** bhf08.17
- Scheduling:**
 - ☐ Scheduled
 - ☒ Immediate
 - ☐ Reboot upon completion
- Schedule Update Date and Time:**
 - Month: October, Year: 2002
 - Calendar: A calendar grid showing the month of October 2002. The date 12 is highlighted.
 - Hour: 4, Minutes: 30
 - Reschedule:**
 - ☒ Run only once
 - ☐ Run Daily
 - ☐ Run Weekly
- Buttons:** OK, Cancel

- **Update Server** – The IP address of the FTP server containing the update list and the new programs and files.
- **Login Name** – The user's name expected by the file server (maximum 32 characters).
- **Password** – The user's password on the file server (maximum 32 characters).
- **File Path** – The file path of the file on the server that contains the list of programs and files to be updated.
- **Update File** – The name of the file on the server that contains the update.
- **Scheduled** – The updates will be handled at the time chosen by the user.
- **Immediate** – Overrides the update time; the update process will begin immediately.
- **Reboot Upon Completion** – Reboot may be selected to reboot the NCT after the update has completed.
- **Reschedule** – Updates may be scheduled to Run Once, or may be scheduled for updating on a Daily or Weekly basis.



Warning: All applications except the NCT Update program should be closed before starting an update. **DO NOT** power off the machine or start any programs during the update process. Notify the system administrator of any failures.

